# Teachers College RECORD

December 1960

AUTOMATION IN EDUCATION

*Machines and Men as Teachers and Learners*

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T. R. Miles discusses
Teaching the Appreciation of Poetry

THE FORD FOUNDATION and Teacher Education

BOOKS & TRENDS  *New Challenges to Traditional Teaching*

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&

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# Teachers College RECORD

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Teachers College
RECORD

VOLUME 62 NO. 3 DECEMBER 1960

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# Two models of a student

PEOPLE ARE DIFFERENT. This ambiguous sentence usually means that different people behave differently even when subject to the same, or approximately the same, environmental constraints. This is the classical use of the term "individual differences" in psychology and education. But there is another interpretation of the sentence. When a particular person is confronted with one kind of problem, the processes, mechanisms, or faculties that he uses can be quite different from those he uses under other conditions. The mechanisms that mediate the behavior of an experimental subject in a psychophysical experiment can very well operate by different principles from those of an experimental subject in a learning experiment. In these two experiments, the psychologist is dealing with two different people. We all hope that in the final synthesis of psychological science we will understand the relation between these two people. But here and now these two people in the same body are more different than two separate people in the same learning experiment.

## *The Theoretical Problem*

In describing the object of his study, the psychologist treats only one of these individuals at a time. Thus, the "learner" as an object of study operates according to a set of principles described by the current "learning theory." The "perceiver," on the other hand, operates according to the currently fashionable models of perception. The artificiality inherent in dividing experimental subjects into a variety of different people is patent, but the historical success of such methods justifies them. We think we have carved the person at his joints, at those points of articulation that allow us to observe the different people in the same skin without unnecessary confounding. Our carving may be imprecise, but

the alternative is an all-encompassing synthesis of the multiplicity of things that a person can do in terms of a single system. To most of us, a clear and simple understanding of one or two aspects of the incredibly complex person is adequate.

In this analytic exercise we often experience anxiety and a general uneasiness at the decomposition we are trying to effect. As a result, there is a tendency toward error. The error can take one of two forms. We may subdivide too finely and miss some integration. But generally we make an error of the opposite kind. We tend to characterize a diversity of behavior in terms of a few principles or ideas. This error results in the development of factions, camps, antagonisms, and the sharp cry that simplicity demands a single mechanism to explain a lot. This simplicity often serves to conceal imperfections in our theory. We cope with a multitude of data but do justice to none. The associationists stretch and pull at their theoretical principles to make them fit the higher mental processes while the cognitive theorists try to shrink their overarching principles to fit snugly the "lower mental processes." The shoddiness of the tailoring is clear on both sides.

## *AIDs and Principles*

It is my thesis that we should not try to make little principles do big things. Let me defend this viewpoint in the context of a current applied problem: how to teach verbal and symbolic skills effectively. I restrict the notion of verbal and symbolic skills to those aspects of an education that do not involve motor skill. This is not to deny that many motor skills contain large verbal and symbolic components.

The most recent and publicized sortie into this training problem has been demonstrated by Auto-Instructional Devices (AID) or, as they are called by the initiates, teaching machines. An AID (and there is a variety) presents information to a student through one of the normal sensory channels, usually sight and occasionally hearing, and then waits until the student has selected, either from a prepared list or from his "interior," a reaction, or a response, or an answer, if you will, to the input material. The reaction or answer this student makes to the device is evaluated (either by the device or by the student). On the basis of this evaluation the device advances to the next item of information, whence the entire cycle is repeated. The student proceeds in this fashion with the device asking questions and the student supplying answers until the machine runs out of questions. These questions or informational inputs are arranged in some order or another, and the items in this order are called a "program." The order of the programmed items always meets the criterion of minimizing the number of errors that the student makes. Insofar as an order has been selected that will minimize errors, the device can be shown to have taught the student something.

Let us bypass all the sundry questions that can be raised about the program and about the exact nature of the machine or its mode of operation, and turn our attention to the learner. What kind of a learner can be taught by an AID?

## *The Conventional Learner*

The classical view of the student characterizes him as a heterogeneous collection of interlocked associations. The way this model of a student, which we shall call Mark I, works is diagrammed in Figure 1. If a problem is put to the student (as indicated by the arrow labeled "input"), a search process begins that compares the input with the first, or stimulus, half of each of the "associations" in the

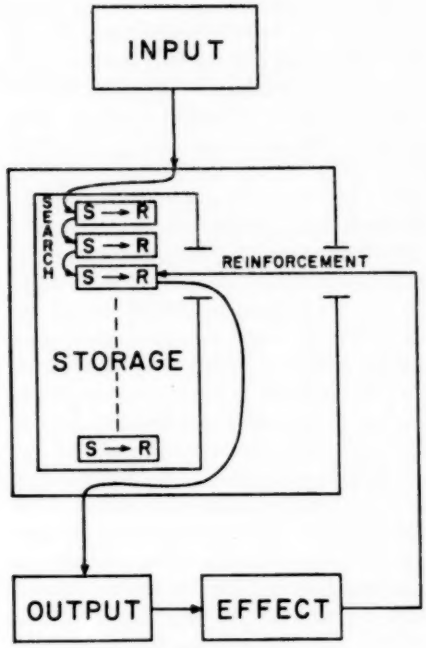


Fig. 1: Student—Mark I

compartment labeled "storage." When a reasonable match between the input and the stored stimulus component of an association is found, the search stops. Now the second half of the association, the response component, is emitted as an output. The whole system is energized by an activating process called "drive" or "motive."

Each of the associations stored inside Mark I has a certain fine structure of its own. Contemporary learning theories have much to say about these associations: how they are formed, strengthened, and changed. In particular, the stimulus half of the association does not have to match exactly the input information. This property of the association, that a variety of informational inputs will trigger it, is the stimulus generalization capacity of the organism.

But the abstract nature of an association is such that a variety of informational inputs can provide reasonable matches. On the response side, the association exhibits a certain loose coupling, not characterized by a unique response but by a variety of alternative responses. Any of the alternative responses may be emitted, depending on the relative strength of the connection between the stimulus and the particular response. These relative strengths are construed as probabilistic, and so we imagine that the connection between the stimulus component of the association and the alternative responses is via a biased roulette wheel. Once some stimulus has been found to match the input information, the drive or motive supplies the power to spin the roulette wheel, and when the wheel stops, the particular response toward which it points is emitted. This *stochastic* connection between the stimuli and the responses gives freedom and variability to ongoing behavior.

Insofar as the student has a large and varied collection of associations stored somewhere, he is equipped to handle a variety of problems. But, the student with such stabilized storage would not be able to alter his behavior nor would he be modified by the consequences of his action. Therefore, this model of the student must have a final component called "reinforcement." A particular association is activated by incoming information, and the roulette wheel stops at some particular response alternative. If the student values the consequences of that action, the strength of his association to that alternative is increased. This is equivalent to increasing the bias in the roulette wheel in favor of the response that was reinforced. And so the student learns as a consequence of his behavior.

New associations are presumably placed into storage by some principle of

contiguity, and are subsequently strengthened by the effects of reinforcement. The student starts as an empty storage box. Associations are poured in and gain strength as a result of the beneficial effects of the outcomes of practice. To teach a student, it is only necessary to provide the occasion for an association to be stored and to reinforce one of the response components of the association. This is the role of the teacher, and the AID is a machine that does this with great effectiveness. The contents of the AID are a particular set of associations; and the outcomes contingent on the formation of an association are construed as reinforcement. The belief that the correct formation of an association reinforces a student devolves on the empirical fact that learning does occur, and because the theory states that learning involves reinforcement, the machine must by tautology, reinforce.

### *Is Association All?*

This model of the student has a great deal to say for it. It is relatively simple, relatively foolproof, probably economical of parts or components, and if the association capacity is large, the student will exhibit a wide range of behavior. It is also the case that there is a tremendous body of empirical literature to indicate that people as students can form associations. Since the time of Ebbinghaus, experimental psychologists have delighted in demonstrating that the most perverse and nonsensical associations can be formed if the subject is willing. That the mechanism is available, relatively cheap, and can be shown to work, provides strong arguments in favor of presuming its universality. Those who hold an associationistic theory of learning and teaching can be rightfully proud of their contribution to our understanding of human nature.

But the fact that associations can be formed, and the fact that associations probably exist, and the fact that associations can be modified by experience, does not, *ipso facto*, discredit the idea that other mechanisms may also be involved in learning. To my knowledge, no proof of the *sufficiency* of an association theory has ever been given. This is not to say that I deny the possibility of such a sufficiency proof; but to insure sufficiency, an association theory would, in all likelihood, require an enormous number of additional assumptions and an incredible amount of componentry. For a further discussion of the insufficiency of association theories of learning see (*1*).

An association model of a student (for the kinds of programs that AIDS must contain) has quite interesting consequences. For example, if associations are formed with insulation between them, which seems to be demanded by the theory, then the question of the order in which the associations are formed should be relatively unimportant. As a matter of fact, informal experiments in our laboratory have demonstrated that learning paired associate nonsense syllables in a self-paced memory drum occurs with equal rapidity regardless of the order of the syllable pairs. This, of course, has never been in question, and no psychologist has concerned himself very seriously with the order in which he presents sequences of nonsense syllables. There are some third and fourth-order effects that are contingent on the subject's use of certain uncontrolled components in the syllable construction, but these effects are small, and, in general, I think it is fair to say that the order is irrelevant for the acquisition and retention of the syllables. In fine, a consequence of this theory is that the order of programming of materials in an AID is not important. But this is exactly what programmers of

teaching machines are certain to deny. This denial casts serious question on the adequacy of the association model as a representation of the learner.

## *Organization and Association*

Why should the order in which the associations are formed have any effect on the formation of the associations? Obviously, something more is present than the mere formation of associations. Some organizational principle is being introduced through the back door—a principle that is not explicit in the model itself. This new organizational principle is usually shrouded in the most marvelous of all mystiques, common sense. "It should be clear," say the programmers of teaching machines, "that certain arrangements of the material are more conducive to learning than others." The artistry of their work testifies to the truth of this statement, but its ontological status in the theory of the student is, to say the least, obscure.

I have spent quite a long time thinking about how to incorporate organizational principles into the associationistic theory. The only inroad I have found concerns the way the associations are stored in the storage chamber of Figure 1. The classical association theory is more or less mute on this point. Suppose we make some *ad hoc* assumptions, or axioms, about how associations are filed in this storage cabinet. In the classical theory, they could be stored helter-skelter, and when any input information arrived, it would be systematically or randomly routed through the associations one by one in whatever order they happened to be stored. Now this plodding search could be a long process and could very easily result in extremely long latencies with no systematic basis. If I were the learner, the appropriate association would in all probability be the next to the last one tried!

One reasonable way to order the storage is suggested by the so-called "principle of postremity" (*4*). The last association to be put in is the first association to be tried. The most recent associations are the most frequently examined. This scheme has been used by computer technologists, and in their context it is called a "push-down store." Oettinger (*3*) has shown that a push-down store is a convenient way to run a storage cabinet if you are going to use the associations to solve problems of translation. He uses a push-down store for the short term memory that a computer needs while a particular translation is in progress. But suppose that you used a push-down store for the permanent storage of all associations. In that case, associations not in recent use would be extremely unlikely to be called upon. Experiments to investigate this question are under way, but as yet there are no clear-cut results. Intuitively, it seems the case that for permanent memory, this kind of scheme is not the most appropriate.

Instead of using a storage scheme with a simple ordering of the associations, we can construe the storage device as having layers. These layers constitute a storage of hierarchical form, much like the organization proposed by Miller, Galanter, and Pribram (*2*) for the organization of "Plans." With such a storage device, the more "general" associations would be stored near the top of the cabinet, and beneath them, branching into greater and greater "specificity," would be the more specific associations. Thus, the input information would match, in a rough-and-ready way, the stimulus component of a higher level association. The response component would send the search process down from that first approximation to more detailed and specific associations

until that association most nearly matching the input was reached and then activated. This kind of scheme for storage capitalizes on the hierarchical organization of the material.[1] It therefore makes important the *order* in which material is learned.

For such a memory, learning should proceed from relatively specific items located at the bottom of the hierarchical structure to higher level associations until, at the very pinnacle, the entering association would be some extremely abstract name for all of the associations that lay beneath it.

Although this hierarchical storage scheme allows certain kinds of organization in the acquisition and use of his knowledge, the student is still a fundamentally passive device whose only dynamic aspect is a searching routine. There is no provision for the student to act on his own knowledge. He cannot (because of the lack of machinery) reorganize, reorder, or reintegrate the material that he has stored. The organization of his mind is in the hands of his teacher. As in most generalizations, there is a certain germ of truth in this idea. In general, the teacher of a child is a powerful force in shaping the organization of the child's knowledge. No psychologist would deny this. At the same time, it is certainly apparent, even to casual observation, that children do grow up and reorganize their information for themselves. They develop skills that we can hardly name, let alone describe. The best we can do is to say that children "develop creativity in problem solving" or some other such verbal mumbo-jumbo. These students that we see reorganizing, reordering, and restructuring their knowledge are active processers of their own memories. Our purely associationistic student is incapable of these higher flights of self-modulation.

[1] It should be noted that this hierarchical memory can be made up of *collections* of push-down stores (*2*, p. 15).

## *Self-Propulsion in Learning*

To provide for self-propelled components in an education, we need a different sort of model for the student. Figure 2 is a diagram of a student who is made like the old one except that he has

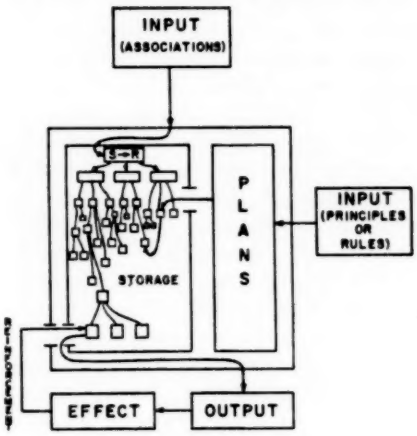


Fig. 2: Student—Mark II

a new component in the box labeled "Plans." The storage cabinet is still there, with the hierarchical arrangement of the stored associations diagrammatically illustrated. He still receives information from outside and emits reactions to this information. He can be reinforced in the same way as the original student, but this added box makes him a new student, the Mark II, to whom we must now turn our attention. Unlike Mark I, this second model can do things for himself. Mark I can be likened to a library, with neatly stored information to be recovered by some suitable arrangement of the storage facilities. But like a library, he is entirely passive to the search that goes on in his bookshelves and to the selection of the

information from his storage chamber. Mark II is more like a library plus a librarian; a librarian who can rearrange the books, read the books, refile them in new ways, and write up new reading lists. The *Plan* serves as a librarian who can put old associations into new orders and who can redefine the criteria by which the input information is matched to the stimulus component of a particular association. Mark II can now act like a person. But what is inside the box labeled *Plan?* We have endowed this box with the qualities of a person, and it is a well known theorem in psychology that you can always make a machine act like a person if you put a person inside the machine. If we plan to say anything about *Plans*, we have to say something about the kinds of components that are inside the box.

Mark II is an information processing device unlike Mark I, who is fundamentally an information retrieving device. The *Plan* for Mark II is like the program of a large-scale electronic computer. This *Plan* is a collection of detailed orders as to how information is to be regrouped, reassigned, and reevaluated. The *Plan* must contain instructions or recipes along with activating mechanisms to work on the stored information according to the recipe that is being compounded. So the ghostly inner workings of our patented homunculus turn out to be nothing more than a new storage cabinet that contains instructions rather than associations. But this new storage cabinet, triggered though it is by the environment, acts not in moving the person, but rather in moving the associations of the main storage cabinet in various ways.

## *Teaching the* Plans

This *Plan* in all of its intricate detail is not something with which we are born; it is something we have to be taught. And so, when we talk about teaching, and if we believe that such an information processing device is a relevant part of the student, we must find some way to talk about teaching the student to construct and to use these *Plans*. But why do we need these *Plans* anyhow? Haven't we made the associationistic student sufficient by incorporating in him a hierarchical structure for his storage? No. Regardless of the number of associations presented to a student and the number he is able to store and thereby use, it is still the case that any student can solve more problems than he could possibly have associations. Every student in high school could arrive at the correct solution to a mathematical problem that he had never seen before. This poses a serious problem for any associationistic theory of problem solving. If the association between the problem and the answer is not stored somewhere, how can the student get the right answer? The answer is that he knows how to calculate. And I take this to mean that he has stored somewhere a plan for solving arithmetical problems. That is to say, he understands the *principles* by which mathematical calculations are accomplished.

## *AIDs and Creativity*

How do we teach these *Plans?* It is clear that they are the stuff of which creativity is made. If we expect students to be able to solve problems that we have not presented to them as examples in their learning, then we must find some way to communicate these principles. Can AIDs do this, or are they limited to the presentation of materials for the formation of simple associations? This is the problem that all of those who fear or suspect teaching machines find most difficult to answer. It appears that an AID can only teach associations, or rote materials, and therefore can never teach a child to be

creative, and, in fact, may result in stultifying any creativity that he may have. This is a serious accusation and one toward which research can be profitably directed. The conclusion that I should like to share with you is that AIDs can teach people to make *Plans* for the formation of problem routines, that they can teach people to be creative, that they can teach principles, and that as a result of these empirically demonstrable facts, they are not as intimately associated with a particular theory of learning as their proponents have argued.

Jacob Beck and William A. Shaw[2] have performed an interesting experiment. They have constructed two teaching machine programs, both teaching the same materials—simple number theory. One program requires that the student copy the answer contained in the item; the other requires a deduction for the student to get the answer. Thus, one program requires only the storage of associations while the other program involves the teaching of *Plans* for making logical deductions. Because the first program that contains only associations is cleverly arranged to ensure a hierarchical storage, the student learns and retains. In fact, on every objective test that contains samples of the materials from the program, students taught by the alternative programs are indistinguishable. If, however, a new test is given that requires the student to solve problems he has never seen before, then the students who have been taught with the program that contains *Plans* for problem solution are markedly superior to the first group. Results of this kind surely mean there are at least two things that a child must learn. On the one hand, he must be given a sufficient store of associations, conveniently coded in a hierarchical form to be available to him with a minimum of search time, and he must be taught *Plans* for problem solving which can operate on these associations to generate new and creative solutions to problems that he has never seen before.

The question is no longer whether students can be taught to be creative, but rather how a student can best be taught to be creative. We must ask questions about what the correct proportion of rote materials relative to planful materials must be. We must discover at which point to introduce items in our AID programs that are destined for storage in the *Plans* component of the student rather than in the storage component. And, of course, we must solve certain mundane engineering problems that these distinctions suggest. Questions of this kind will keep many of us busy for many years. But if we recognize that these are problems of merit, we will go a long way toward terminating fruitless discussion about what auto-instructional devices can or cannot teach. The devices are available; there is some intelligence around that can write programs for them, and we cannot afford to spend time discussing whether it is possible or not. Meanwhile, by capitalizing on the practical utility of AIDs, we can also learn something more about our own structures and characteristics as human beings.

[2] Reported in a recent personal communication.

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# A do-it-yourself kit for programmed instruction

A NEW PEDAGOGIC method, *programmed instruction*, has made its appearance on the educational scene. Its birth cry has been perceived by some alarmists as the challenge of the brassy teaching machine for the teacher's place on the classroom podium. To me, the birth cry of the new methodology sounds more like a cry for help.

The working school teacher may be able to respond to this appeal. He has a number of skills which can be useful in the preparation of programmed materials. If these skills are utilized, the development of programmed instruction may be aided in an important way because the availability of programmed materials in a wide variety of subject matters is, in my opinion, crucial for the rational development and testing of the new instructional methodology.

Several practical problems impede the large scale preparation of instructional materials at present. Before elaborating these problems, I want to describe what I believe to be the essential elements of the new instructional technique.

## *What Is It?*

In programmed instruction, the entire instructional sequence is planned and scheduled beforehand. An attempt is made to control instruction as completely as possible throughout its course. The physical form of the instruments for the scheduling and control of instruction may vary from teaching machines of considerable electro-mechanical complexity and substantial cost to simple, inexpensive, mimeographed booklets. The exact configuration of the instruments is not important for the present discussion. What is important is the heart of the methodology, the program.

Most programs consist of a long series of carefully constructed and integrated written sentences. The sentences are devised to give the student depth of understanding for the subject matter. They are calculated to draw the pupil into his topic and to maintain in him the sort of tension which will make him stick to his work. A high proportion of these sentences, sometimes all of them, may be questions of some kind. The student may be required to respond to these questions. In the case that questions are asked, information about the adequacy of his response is delivered to the student immediately.

Two main types of programs are distinguishable in a field noted for the variety of its enterprises. These are *extrinsic* and *intrinsic* programs. In extrin-

sic programs, the sequence in which the students go through the instructive items (or "frames") is fixed and is the same for all students. Intrinsic programs, on the other hand, allow for differences among students, sending some of them through different sequences at stages in the program according to their need. The branching occurs at certain key items. The response made by the student to these key items determines the frames which are next presented. The branches, which are designed to allow for predictable weaknesses or difficulties, subsequently rejoin the main stream of the program. For a more detailed description of a form of extrinsic programming, see Skinner (7); for intrinsic programming, see Crowder (2).

Three characteristics of programs stand out above all others. Programs are *comprehensive* and *explicit*, and *their development is an empirical enterprise*. A program is comprehensive because it includes everything which the student must see or hear in order to achieve his educational objective. The program specifies and guides the form of the responses which the student is to make throughout the instructive sequence. Programs are explicit descriptions of instruction because the program is a detailed record of the instruction which has been delivered to the student. His responses serve several purposes, but they can be happily thought of as receipts. The student's performance, during and at the end of the instructional sequence, is an assessment of the quality of goods which have been delivered. Within certain limits, the responsibility for achievement shifts from the student to the programmer. The quality control mechanism which is inherent in programmed instruction allows the development of programs to become an empirical enterprise. Since the content of instruction has been specified explicitly and in minute detail, a systematic effort can be made to find and improve weak portions of the program if the student's performance is not satisfactory.

### *Some Difficulties*

Although programs can be perfected by empirical methods, it is impractical to start laborious and expensive tests of each successive approximation of a good working program until it is reasonably close to a workable product. The process of getting a program into this state has been the Sargasso Sea which has slackened the sails of many good intentions. Difficulties arise from two main sources: the absence of a body of communicable and powerful principles to guide the program writer, and the requirement that the programmer has a thorough understanding of his subject matter.

The absence of potent and explicit prescriptions for writing programs may come to some as a surprise. A naive but charming myth has gained acceptance in some circles. It has two forms. One is that programmed instruction has come from the psychological laboratory as a concrete and tangible product like a neatly machined ultracentrifuge or a newly developed amplifier. The second and even lovelier form of the myth is that the psychologist knows something which can be a powerful and specific aid to people who write programs!

It is true that programmed instruction originated in the laboratory of the experimental psychologist (although some wags would have it that it was left on the laboratory's doorstep). It is also true that work is now under way in several laboratories to bring at least the second form of the myth closer to reality. Theories of learning, however, are still in their infancy, and the body of empirical facts which is immediately use-

ful for programming applications is limited. The learning psychologist supplied a number of general principles. The conceptualization of knowledge and skills in the convenient shorthand of a stimulus-response language is among these. So are self-pacing of practice, gradual and "easy" steps in the development of the subject matter, emphasis on considerable repetition of the material in a variety of syntactic and semantic forms, and immediate knowledge of results. These and other general principles are not enough, however, to instruct a programmer. It is not possible at present to assign a bright, prospective programmer any particular set of books or articles for study and be assured that he will be prepared to do a good job. Instead, the best one can do is to outline techniques of programming in rather broad brush strokes. The candidates are asked to look at the few available programs and to use them as if they were students. Then the novice programmer attempts to write some programs. The results are criticized, rewritten, and criticized again. Some predictable shortcomings such as putting too much information into a single instructional item or frame are extinguished, and the more frequent use of concrete examples is encouraged. Programs are rewritten, often including more material. Even so, some of the resulting programs will be completely unusable. A fair number will be undistinguished. A few will be good.

It is likely that some programmers will be consistently more successful than others. Once we have identified some people as good programmers or have described them, somewhat conceitedly, as "knowing programming," a new difficulty becomes recognizable. If a good programmer is to write a program for introductory electronics, he must know something about electronics. It is clear that a fairly thorough understanding of a field is required before a good program can be written. Some programmers have spent a good deal of rather expensive time learning about subject matter with which they have had no previous experience. One solution to this problem which has been tried, at times with success, is to attempt programming with a team consisting of one or more programmers and a subject matter expert. But such undertakings founder easily in the tangle of personal relations and the waste motions of the work conference.

We are now in a position to sum up the chief problems in the practical production of programs. It is difficult to train programmers because programming at present lacks in science, and it is difficult to build up a cadre of professional, general program writers because considerable subject matter knowledge and sophistication is required. These considerations are critical for the continued development of programmed instruction as an educational tool. Programs are needed in considerable numbers if this new instructional technique is to get the kind of widespread try-outs which appear warranted by its promise. Further, the easy availability of programs in a variety of different subject matters will stimulate the kind of study and research which is likely to lead to improvements in the rational basis for programmed instruction and instruction in general.

### *The Teacher as Programmer*

These difficulties suggest to me that we should look to the teacher as a supplier of programmed instructional materials. Experienced teachers know a good deal about explaining. They know the language level at which their students operate. They are for the most part bright, articulate, and patient. Teachers are familiar with those parts of their

courses which usually offer difficulty—those which require careful staging and slow progress. Most teachers have learned what the main sources of difficulty in their courses are and a number of verbal maneuvers or working examples which nearly always bring the sunrise of understanding into their pupils' faces. What I propose is that teachers put information of this kind to work in writing programs.

## *Writing a Program*[1]

The first step in attempting to write a program is to look at some already available. Commercial programs are just now coming on the market. Nearly all of these can be used in booklet form and do not require machines. Some good available examples of extrinsic programs in the general style of Skinner have been produced through the efforts of a small group of experimental psychologists in New Mexico (*8, 9, 10, 11*). Good examples of intrinsic programs are also on hand (*2, 3, 4, 6*). Read several of these or similar programs carefully, and try to get a feeling for the way in which these programmers organize and develop their subject matter.

Once you have an appreciation of the technique, try to prepare a program yourself. Pick some reasonably small, relatively independent, and self-contained unit within a course. Wait until you have had much more experience and have gained confidence in your ability before you undertake more ambitious jobs such as programming the major portions of a course. Otherwise you may become discouraged. Suitable topics include Ohm's law, the reigns of British monarchs from Elizabeth to the present, the varieties of verse meter, square roots and exponents, or the concept of chemical valence. It is a good idea if several teachers dealing with the same subject in the same school try programming the same unit. This procedure creates a spirit of competition which may be helpful in writing programs. Having several teachers attempt to program the same subject matter also creates a group of people who would be well motivated to criticize each other's work.

In attempting to write programmed materials it is well to dispel the notion that you are engaging in some arcane enterprise. Imagine what you would have to tell or show a single student in a tutorial situation in order for him to meet all course requirements without having to read a textbook. What would be a good way to organize the information? Is the material primarily conceptual or factual? If the material is chiefly conceptual it is probable that there are several different conceptual structures that will support the kind of performance you want in your student. A pupil can learn enough electricity to solve simple DC circuit problems in a number of ways. You can teach him about subatomic particles and forces. All subsequent matter can be developed in these terms. On the other hand, atoms need never be mentioned. The notion of electron flow can be used to develop the main relevant ideas. Even more simply, the student can be taught a series of rules about various electrical phenomena. Students taught according to these various conceptual systems may perform differently at the end of the course with respect to certain kinds of requirements.

[1] No effort is made to document the basis for the recommendations which are enumerated in the following paragraphs. Some of these probably cannot be defended in terms of any single generally accepted empirical fact. They are merely my opinion and those of a few other workers in this area with whom I have had contact. The recommendations seem safe and plausible aids to programming instructional material.

The "rule" and the "electron flow" students may have subsequent difficulties in learning to understand new relationships between electron flow and the electrolytic dissociation of solutions. But the performance of all students is likely to be nearly identical as far as DC circuit problems are concerned. Choose the conceptual system which you want to support your students' performance on the basis of simplicity consistent with need, transfer value for other portions of the course or other courses, and mnemonic value.

Once a particular conceptual framework has been chosen, make an exhaustive list of the major conceptual terms within this framework. All terms which stand in nontrivial relationships to other terms should be listed in this manner. Consider the most basic relationships among the listed terms, and organize the development of your material accordingly. Remember that the conventional way of organizing your topic may not be the best. Most standard textbooks use the style of exposition and the organization of the scholarly works on which they are based. Seldom are they written specifically to promote learning!

If your subject matter is primarily factual, consider whether you can provide some sort of mnemonic framework which will help to organize the facts. "Eras" in history are examples of such mnemonic organizers. The mnemonic framework should tend to break down the required mass of facts into no more than five small clusters or units of facts (in the example of the monarchs of Britain, this could be the several dynasties) which can readily be handled by the student. The clusters may have subordinate units (preferably no more than five, like kings within dynasties). If the material warrants it, several levels of subordinate units should be constructed.

### *Extrinsic vs. Intrinsic*

Now decide whether you want to use the linear progression of extrinsic programming or the branching format of the intrinsic method. It is safer to stick to extrinsic programming unless students' error tendencies can be easily anticipated and errors fall into a small number of nicely differentiated categories. Also, intrinsic programming usually requires multiple-choice responses, and these require more effort to construct than the fill-in items which are commonly used in the extrinsic method. Regardless of the method you choose, prepare your program in book form. Although some inexpensive teaching machines are now on the market, it is more economical to start with small mimeographed booklets. Put one frame on a page and the answers to questions or incomplete sentences on the reverse side of the question leaf. Do not worry about your student's "cheating" by looking ahead in the booklet. It is not clear whether this kind of "cheating" interferes with learning at all.

Use your list of conceptual relationships and your conceptual or mnemonic outline in preparing the individual instructive frames. Each relationship on your list should be covered by at least two frames and probably more. Cover all syntactic and semantic variations you can conceive for each relationship. For example, in preparing items covering a given formula in physics, use all permutations (algebraic variations) of the formula. Include not only the permutations of the various symbols, but also the words which stand for each of the symbols. Substitute each word or phrase, singly or in combinations into the formula. Try restating the formula in sentence form in several different ways. These restatements of relationship do not have to appear in immediate sequence in the program but

should be reasonably close together. It is thought that such restatements in various form are a very efficient form of repetitive practice. Skinner (7) has characterized this procedure picturesquely as "ringing the changes."

In preparing each individual frame, satisfy yourself that the student is likely to be familiar with all the words you are planning to use. If there are some doubtful terms, write a special frame in which you define each one. Each frame in the extrinsic method should consist of one or two simple sentences which carry the exposition forward in *very small steps.* One method is to compose a frame of a modest amount of old information and a *very small* amount of new material. A good strategy is to state some relationship or rule and then illustrate by an example.[2] Then restate the rule or provide another example, but omit one or more terms in this frame. The student is asked to provide the missing words. Some programs have a missing term in nearly every frame. It is thought to be good procedure to write incomplete statements or questions in such a way as to assure that the student responds to these correctly in the great majority of instances. This can be done by making the question frame wholly or partially synonomous with the most recent instructive items. Some program writers have even used prompting strategems of various kinds to increase correct responses. These have included devices such as providing some of the letters of the missing terms or various mnemonic rhyme schemes.

## *Student Try-Outs*

Write your program on 3-by-5 cards. This will facilitate rearranging the order of the frame and inserting new frames in the sequence when they are needed. As soon as you have completed a first draft, rewrite it right away. Novice programmers often tend to put too much new information into their frames. Aim at having twice as many frames in your second draft as you had in your first draft of the program. If the second draft seems adequate, try your deck of 3-by-5 cards on one of your students. Watch your student while he works. Record the amount of time he spends on each frame. Encourage him to ask you questions if, *and only if,* he runs into difficulties. He will quickly find any undetected weak portions of the program for you. Continue this general procedure until you feel reasonably sure that the program you have written will teach your students what you want them to learn. Then find out whether you have done a good job by administering the program to the students in your classes and testing them.

It does not seem unreasonable that teachers who are responsible for the same courses within some locality—e.g., a regional school system—could evolve some informal organization which would select from their own programming efforts a program which would suit their needs. The program so selected could then be produced in booklet form by a commercial printing firm. If the school system is adventurous, some effort can be made to shop among various commercial sources for a "teaching machine" appropriate to the requirements of the programs. Eventually, the entire production process for programs, including writing, will probably be handled by commercial organizations, perhaps book publishers. The experience which individual teachers gain in writing programs is likely to be of help to them later in evaluating available commercial programs.

[2] This is one of the combinations used in the so-called "Ruleg" method; for further description of this method see Homme & Glaser (5).

There is another advantage which the teacher could derive from the experience he gains in programming. Commercial producers of programs may someday require good programmers in fairly large numbers and may have to pay them handsomely. The teacher who finds that he is good at programming may want to consider the possibilities of professional programming as an interesting and profitable career.

## *Summary*

I have attempted to argue that the development of programmed instruction as an educational tool is at present impeded by two difficulties. These difficulties grow from the weak rational basis for program writing and from inadequate subject matter knowledge among program writers. One interim solution is to look to the school teacher as a source of programs. If the teacher meets this challenge and becomes interested and skillful in programming, we may expect a massive increase in the number and variety of available programs. Regardless of the source, a large variety of programs is needed if programmed instruction is to get the kind of extensive trials which its promise as an educational tool seems to warrant. Further, the availability of a great variety of programs is likely to stimulate the study and research which may contribute to the rational basis for programmed instruction and the instructional process in general.

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# The instructional gestalt: A conceptual framework

THE OBJECTIVES of this paper are (1) to summarize some of the major findings and implications of the research concerning the relative level of effectiveness of televised course instruction conducted at Miami University; (2) to offer a critical appraisal of the characteristic pattern of research on the teaching-learning process in general and on new educational media in particular; and (3) to suggest a conceptual framework that may serve as a point of departure for certain types of investigations of teaching and learning in the future. The latter objective is really the focal point of the paper.

Miami University's Experimental Study in Instructional Procedures (ESIP) was developed in recognition of the fact that burgeoning enrollments accompanied by staff shortages will lead the nation's schools to make increased use of various kinds of large-group instructional facilities and processes. Furthermore, recent electronic advances, particularly in the area of instructional television, make possible the presentation of unique kinds of visual materials which may enhance the quality of the educational experience provided in certain courses.

Although the ensuing discussion summarizes only those findings which relate to televised instruction, the entire Study was concerned with a variety of large-group instructional procedures, including the lecture and case-study approaches. The research project, now completed, was partially supported by two grants, totaling $285,600, from the Fund for the Advancement of Education. These grants were for the period November 1, 1955, through June 30, 1959. A detailed report of the entire series of investigations was published at the conclusion of the project (3).

## *TV Instruction*

Four courses a year were offered by television during the period of the Study. The specific TV courses in which research was conducted during the three-and-a-half year tenure of ESIP included Foundations of Human Behavior, Principles of Human Physiology, Introductory Sociology, Human Biology, Air Science, Principles of Economics, Principles of Animal Biology, and American Government.

Televised instruction originated from a studio and was transmitted on closed-circuit to several receiving rooms, each seating 35 to 40 students. This arrangement made it possible for every student to be close enough to the TV receiver to have a "front-row-center seat" for seeing

mock-ups, charts, and other visual aids. The decision to originate TV presentations from a studio rather than from a classroom was predicated upon production considerations. Televised teaching requires new techniques and new materials, and the space, equipment, and lighting conditions of the TV studio are necessary if a quality picture is to be produced and the teaching itself adapted to the strengths and weaknesses of TV as a communications medium. Experience has since demonstrated that while instructors are loathe to go on TV at first without a class physically present, they soon accommodate themselves to "teaching to the camera" and actually prefer studio teaching after a short time.

Course instruction does not necessitate the split timing of the commercial program, nor does it require the finely coordinated actions of teacher and camera which can come about only through rehearsal and adherence to a detailed script. A considerable amount of freedom is desirable in order to maintain an atmosphere of informality. Nevertheless, the presentations must be "professional" and show evidence of careful planning and execution. Thus, the procedure evolved represented a compromise between adherence to a prepared script and the informality generally characteristic of conventional teaching. The instructor outlined his presentation, discussed it with the TV director, and they jointly mapped out a sequence of action for each class. All demonstrations, models, etc., had to be pretested on camera prior to the actual televised presentation.

The attempt was not made to hold all of the TV courses to a uniform procedure. Foundations of Human Behavior, for example, met for two periods weekly (80 minutes each) with TV presentations taking up approximately 50 minutes of each day. The remaining 30 minutes were set aside for discussion under the leadership of graduate teaching assistants. Air Science, a two-credit course, was presented in two weekly 50-minute TV sessions with no provision for a discussion period. The courses in zoology and physiology each consisted of three 50-minute periods of TV instruction with two hours of laboratory per week. Economics was presented in two 50-minute TV presentations per week with the third weekly class session devoted to discussion in small sections under the leadership of a faculty member. The three weekly sessions in Sociology were each divided into a 30-minute TV presentation followed by a 20-minute discussion led by a faculty member.

Evaluation to determine the relative effectiveness of televised instruction depended, for the most part, upon comparisons between TV classes and small-size control groups taught by conventional procedures. The course content, reading assignments, final examinations, and instructors were all constants in the experimental and control sections of each course. The one factor systematically varied was the mode of presentation.

An obvious critical requirement for this kind of investigatory approach is the matching of students receiving TV and conventional instruction. Thus, students in the experimental and control sections of each course were routinely equated on the basis of tests of proficiency in mathematics and English as well as a test of general academic ability. In addition, when feasible, the sections were equated on the basis of scores on a pretest of subject-matter knowledge (administered during the first class meeting) and on grade-average earned during the previous semester. A final matching variable was the proportional distribution of freshmen, sophomores, juniors, and seniors within each section. The matching procedure

was, of course, accomplished prior to the collection of any other data.

## *Findings and Conclusions*

The findings relative to TV facilities, student achievement, student attitudes, and faculty reactions are summarized here without recourse to the actual presentation of statistical results.

*TV Facilities.* The costs of purchase and maintenance of TV equipment are relatively high; consequently, TV teaching is not economical unless it reaches large numbers of students. Costs vary, of course, depending upon such factors as the kind of studio equipment used and the salaries and load credit for professional and technical personnel involved in course production. The "break even" point for Miami University was between 250-300 students per course at a given time.

One of the greatest handicaps to effective televised teaching is the lack of rooms designed for TV reception. The conventional classroom with its bank of windows along one wall, its overhead direct lighting, and its generally poor acoustical properties is highly inadequate as a TV receiving room. Another serious handicap to televised teaching is the lack of receiving sets of sufficient screen size for class viewing. The picture quality of large screen receivers wherein the picture is exploded to life-size is relatively poor.

*Student Achievement.* Studies of subject-matter achievement of students assigned to TV and conventional sections involved comparisons of the scores earned on the objective portions of the final examinations. It was quite apparent that TV instruction is as effective as conventional instruction in this regard.

Achievement defined as the ability to solve problems and to synthesize information was also investigated in TV and control sections. The results support the general conclusion that televised instruction does *not* lead to reduced proficiency in these areas.

The possibility that section assignment and level of academic ability act as joint determinants of student achievement was investigated in virtually all courses. The evidence obtained does *not* indicate a differential level of achievement for high ability students in TV and in control sections of these courses. Similarly, low ability students achieved as well regardless of their assignment to the TV or control section.

A study designed to reveal differential effects, if any existed, of TV and control instruction upon long-term retention was conducted for three courses. Subject-matter retention after periods ranging from one to two years is clearly unaffected by the instructional procedure (*4*).

*Student Attitudes.* Students in the TV sections tended, in general, to rate the course content somewhat less favorably than did students in the control sections of the same courses. Similarly, according to student opinions, television tended to reduce the instructor's effectiveness as a teacher. This perceived reduction in teaching effectiveness was *not*, it must be remembered, paralleled by a corresponding decrement in the actual measured achievement of students in the TV sections.

In most courses, students preferred small classes over TV. Although it has been found possible to teach a TV course in such a way that students actually prefer it to conventional instruction, this accomplishment requires a unique combination of instructor, course material, and the full use of television as an instructional medium. This combination proved rare. There was some indication that TV instruction was more acceptable to low ability students than to more capable ones in those courses where visuals of various

kinds comprised a significant portion of the presentations.

Interestingly the instructor himself seems to be a major determinant of student attitudes about TV instruction. There was a pronounced tendency for students to react consistently in either favorable or unfavorable terms to both their instructor and their TV classes. The majority of students regularly indicated that they would enroll in a TV class, even though they preferred small classes, if they could be assured of being taught by an excellent teacher. In a similar fashion, students in the TV sections were sensitive to and reflected the attitudes of the assistant instructors responsible for managing the receiving rooms. The relationship between the attitudes of the assistant instructors and the attitudes of the students in their receiving rooms was stronger during the first than the second semester of the year sequence.

Student attitudes about TV instruction were not major determinants of their subject-matter achievement. Apparently, motivation from a variety of sources is sufficient to overcome any negative reactions students may have to receiving televised rather than conventional instruction.

*Faculty Reactions.* Practically all instructors who have tried TV teaching like it better than they thought they would. Although most would still prefer to teach conventional classes, there was considerable feeling that TV classes are superior to other large-group teaching procedures. As for faculty members who had not tried TV teaching, their reaction is probably best described as "moderately favorable." About one-third of this group believed that televised instruction has a definite place in college course-work. Another third felt that TV should be used primarily for off-campus instruction and for supplemental work on the campus. Most of the remaining third either felt that televised instruction should be abandoned (11%) or were uncertain about its place in the university setting (15%).

A study of load practices for TV teachers on a number of different campuses indicated that current administrative practice did not, as a rule, permit sufficient reductions in load for such teachers. The evidence accumulated indicated that each closed-circuit TV course should be weighted as the equivalent of approximately two-and-a-half conventional classes, whereas each open-circuit TV course with off-campus enrollment should be weighted as the equivalent of about four conventional classes (*2*).

### *Some Implications*

The structure of the American educational system is somewhat conducive to a degree of faddism. It is subject to vogues in its underlying operative philosophies and, in consequence, current techniques and objectives may become rapidly outmoded or "updated." This is due, at least in part, to the fact that certain fundamental issues relative to education in a democracy are difficult to resolve. The necessity for providing for the "slow learner" in the public school system, combined with a certain amount of reticence about creating an intellectual elite, for example, has led to vacillation in policy regarding ability sectioning of pupils of similar chronological ages. Such sectioning was quite prevalent in larger cities prior to World War II, but there has been strong feeling against it during the post-war period. Although many school systems continued to section on the basis of ability, there was some tendency to obscure the procedure from outsiders. At the present time, of course, the pendulum has swung back, and the "track system" is advocated widely and openly.

Will the new educational media be subject to this kind of ebb and flow of

interest? Are televised instruction and teaching machines, in particularly, merely current fads which will be replaced in due course by other newer and, therefore, more sparkling and attractive gimmicks? This is unlikely. The need for media utilization in order to improve and extend educational opportunities in the foreseeable future is too great. These media, wisely used, will enable us not only to educate more persons, but to do it better. If used unwisely, however, they can lead to a preoccupation with quantity at a sacrifice of quality.

The recently published report of the seminar on the Uses of Television in Education conducted by the North Central Association (*1*) contains a point of view that helps place TV in particular and educational media in general in perspective. Such media, the report points out, have no magical properties; they are merely facilities of communication. They do not modify the recognized aims of education; rather, they suggest alternative techniques for attaining the same goals. Thus, the media cannot be regarded as panaceas.

Although it is impossible to envision all of the consequences of extensive media utilization for educational purposes, a few of the emerging patterns of change are already upon us. These are especially visible when entire courses are transmitted via television, particularly with the possibility of storing courses on video-tape and rebroadcasting them on subsequent occasions. The potential for widespread dissemination of instructional TV programs grows progressively more apparent.

*The Curriculum.* Electronic advances have far-reaching implications for curriculum structure. It is possible now for smaller schools to provide their pupils with previously unknown educational opportunities. A high school without a physics teacher can, by means of TV, offer a course in physics taught by a top-notch teacher. Whether or not such a televised course is as good as one taught by a teacher in the flesh is an inappropriate question. The choice, in such instances, is between offering televised instruction and not offering a course in the area at all. Furthermore, the possibility of providing supplemental enrichment by television, radio, and even by telephone is one that should not be overlooked even by schools that are in the enviable position of being adequately staffed. Finally, the media offer tremendous possibilities for encouraging independent study and advancement by capable students, thereby freeing the teacher's time for more concentrated attention to individual problems. The language laboratory and teaching machine can be particularly useful in this way.

*The Teaching Profession.* The possibility of full utilization of media for educational purposes has led some teachers to fear technological unemployment. Others, who do not fear displacement by a 21-inch image or a recorded voice, sometimes express concern about the effect of media utilization in reducing the severity of the staff shortages currently being experienced. The latter concern is based upon the tendency in our society to place a higher monetary value upon services that are in short supply relative to the demand.

There are other subtler, but perhaps even more important, elements in the perceived threat imposed by the new instructional media. Most teachers are repelled by the idea that they may be relegated to the position of bookkeeper and question-answerer without responsibility for making the fundamental presentation to the class. Even the TV teachers in the Miami Study raised certain questions about their role as teachers and the

validity of their reasons for entering the profession. Many TV teachers sorely miss the opportunity to know their students personally and to watch each individual as he grows and develops.

It is certain that the new educational media are directly responsible for changes in the teaching profession. The impact of media utilization upon teachers' self-perceptions, the status of the profession in the eyes of the community, and the structure of pre-professional recruiting and training programs merits considerably more research than has been heretofore conducted. These areas of investigation would appear to be especially fertile ones for social psychologists and sociologists.

*Students.* The fuller utilization of instructional media has potent implications for the behavior of students and for the attitudes toward the learning process which they will develop. The media encourage a degree of independence in learning which contrasts markedly with the approximation to spoon-feeding that transpires in many "conventional" classrooms. The learner is prevented from adopting a passive sponge-like posture relative to his learning. He must assume considerable responsibility for his own scholastic progress. It is likely that more extensive use of the electronic media will compel the learner to discover another medium of communication that has been all but neglected in the course of much conventional teaching—the book! There may be a happy day on the horizon when more students will adopt the attitude of "I must learn" and fewer will defy the school to "teach me."

American education is committed to the premise that as many capable youngsters as possible be given an opportunity to pursue scholastic endeavors. Broadcast television at the college level implements this premise by making it possible for persons who cannot come to the campus to earn credits toward graduation at home. The Chicago City Junior College, for example, has been successfully televising a spread of courses to off-campus students for the past several years. If this practice gains momentum, there is the distinct possibility that the socioeconomic level of the resident student body may change upward. Attending classes while in residence on a campus could gradually become a luxury available only to financially privileged youngsters.

*Instructional Plant.* The school building divided into as many cubicles as possible, each capable of seating about thirty students, has become a relic. Classrooms must now be planned with a view toward optimizing the potential contributions of instructional media. Huge windows, for example, may help to create a cheerful atmosphere on sunny days, but they can also create devilish problems of reflection from TV receiving screens.

The notion that classrooms and buildings must be designed to accord with the kinds of learning activities that are to transpire within them has never been more important than it is at the present time. It may be possible to transform a conventional classroom into an adequate language laboratory, but it is easier to plan for such a laboratory at the time the building is on the drawing board. Similarly, audio-visual experts must assume a centrality heretofore unknown in planning the physical plant. Similarly, Audio-Visual Departments can no longer be charged solely with obtaining and distributing films and records from their location in some obscure corner of the basement or attic.

*Research.* The development of new educational media has been paralleled by a massive amount of investigation designed to evaluate their effectiveness. This is, in a way, one of the most significant implications of media utilization. In

the course of such investigation and evaluation, we have been led to question much of what has become "conventional" during the years preceding the teaching machine and the electronic tube.

Certain assumptions about small-group instruction have been found generally to be untenable. The mere fact that a class is small in size, for example, does not necessarily insure a high degree of interaction between students and teacher. Many teachers lecture to conventional classes with the same information-dispensing orientation that is usually associated with the stereotype of large-class instruction. Conversely, large classes, like some of those at the Harvard Graduate School of Business, may provide for a relatively high level of verbal interaction. This kind of inconsistency between the variable of class size and the nature of actual classroom activities is only one of a variety of factors that complicates educational research.

The critique of educational research that follows is offered with the full realization that it is founded upon generalizations. Although these criticisms cannot be applied to *all* research upon teaching and learning, they are so frequently appropriate as to be a source of considerable concern. The writer is aware that his critique is germane to some of his own work. The researcher-reader also is invited to try the shoe on for size.

## *Null Results*

The typical pattern underlying much of the research in teaching and learning involves comparisons between the relative effectiveness of various kinds of instructional environments (TV, large classes, conventional classes, classes with much use of instructional films, etc.). Within the limitations imposed by measurement procedures, it is generally found that students learn about as much when exposed to one kind of instructional environment as they do from exposure to another. No significant differences are reported with a monotonous degree of regularity, although the publication of these null results often contains a cautionary note about the possible operation of the "Hawthorne Effect."

The inappropriateness of the criteria of learning utilized in much of the media research need not be labored here. The criterion most often used is provided by the final course examination. The process whereby an instructor is brought to the point where he can specify his objectives in terms amenable to evaluation and then build examinations which test more than the acquisition of a compendium of facts is a laborious one indeed. It is unlikely that studies of relatively brief duration can attempt to utilize measures of higher level cognitive processes as dependent variables. Evaluative data gathered in the affective domain are even more generally neglected.

## *Lack of Theory*

Perhaps the most serious criticism of educational research is that it too often is conducted in the absence of a unifying theoretical framework. The resultant data are thus grossly descriptive, but they indicate little of what occurs during the teaching-learning process and still less about the interaction of the factors which produce the results obtained. Controls are too often exerted over a few superficial and easily measured or classified variables (like class size or academic ability) at the expense of the dynamic flavor of the educational process.

The literature on the relative effectiveness of TV and conventional instruction abounds with illustrations of the effects of investigation in the absence of an underlying conceptual framework. The assumption critical to the typical design in

these instances is that televised and conventional classroom procedures represent uniform conditions sufficiently homogeneous and independent to permit their utilization as independent variables. It is apparent, however, that these conditions are really neither homogeneous nor independent of one another even when the usual experimental controls are exerted. TV classes may differ from each other with respect to the use made of various kinds of visuals, the technique of the director, the physical layout and size of the receiving rooms and a host of other factors. Conventional classroom environments may differ with respect to number of students, amount and level of student-instructor verbal interaction, etc. The fallibility of the assumption of independence of these classroom environments is immediately apparent when one considers that the teacher who discovers a visual device or a mode of presentation that enhances the quality of his TV presentation is justifiably eager to use it also in his conventional section.

Thus, comparisons of the type often reported in the literature reflect the influence of a potpourri of variables, some of which are controlled by experimental design, but most of which are perhaps erroneously treated as of little consequence. This criticism is not meant to imply that the usual research pattern is valueless. The point is that the time has come, particularly in media research, to stop inquiring whether one mode of presentation is as good as another, and to undertake more concentrated investigations of the conditions which lead to maximal realization of educational objectives. Instructional television, teaching machines, books, films, etc., are merely devices, each with its own peculiar strengths and weaknesses. We must devote more attention to exploring the limits of these devices, each in its own terms. The teacher in front of the TV camera who does essentially what he ordinarily does in the conventional classroom is televised, but he is not exploiting the possibilities of *instructional* television. The investigator under these circumstances can discover little of value to the improvement of teaching and learning processes.

### *The Instructional Gestalt*

The conceptual framework offered here is rudimentary in nature. It was designed with a view toward providing some kind of underpinning for educational research of various kinds, including but not limited to media research. While it fits the writer's biases and predispositions at the present time, the disagreements by other investigators may generate a still more useful theory to guide meaningful educational inquiry.

The designation of a class as a "TV class" or as a "conventional class" is predicated solely upon one aspect of the classroom environment. In contrast, the *instructional gestalt* is broad in concept, embracing the full multiplicity and patterning of factors entering into the teaching-learning situation. The gestalt includes but is not limited to the classroom environment. It is likely that the factors comprised by the instructional gestalt interact differently in different kinds of classroom environments. In consequence, we learn little about the gestalt of teaching-learning from studies of particular classroom environments alone.

The selection of variables to be included in the conceptual framework was predicated upon four fundamental considerations: (1) Each of the variables may be expected legitimately, on the basis of previous research, to have some bearing upon at least one of the criteria of instructional effectiveness. (2) The variables must be measurable or are amenable to categorization and classifi-

cation. (3) The variables may be manipulated in either direct or indirect fashion. The direct manipulation of variables may involve alterations in classroom environments or techniques of presentation. The selection of students to receive certain kinds of instruction and of teachers to conduct certain kinds of classes constitute a kind of indirect manipulation. (4) There is reason to believe that these variables underlie what takes place in the instructional gestalt in a "fundamental" or "causative" fashion.

Four major classes of variables are included in the conceptual scheme. These classes are identified as classroom environments, student variables, instructor variables, and course variables.

*Classroom Environments.* These are defined by the physical setting and characteristics of the classroom and by the events of the class period. Some of the specific variables which enter into the composition of the environment include (a) Class size, (b) physical characteristics of the classroom, (c) the physical presence or absence of the instructor and of any visuals, demonstrations, etc., he may use, (d) the methods and extent to which visuals of various kinds are utilized, and (e) the extent and level of verbal participation by students in class activities.

It is readily apparent that gross classifications by environment, like "TV classes vs. conventional classes," provide for variations with respect to such variables. It is important to note, however, that different sections of any course designated by the same gross environmental classification (e.g., "TV class") may really constitute different environments.

*Student Variables.* The students exposed to any classroom environment are heterogeneous with respect to a tremendous number of variables. The ones selected as of particular pertinence to the instructional gestalt are the following: (a) A constellation of characteristics variously designated as intelligence, academic ability, scholastic aptitude, etc. (b) Knowledge about the subject matter prior to enrollment in a course. Such prior knowledge may have been obtained from courses previously taken or from readings of a general nature. (c) Motivation with respect to the specific course content. Why is the student taking the course? What significance does it have for him in terms of his vocational or personal objectives? (d) The student's set toward education. The extreme poles on the continuum of set may involve, on the one hand, a predisposition to accumulate facts and, on the other, a predisposition to learn concepts, principles, and general approaches.

*Instructor Variables.* Smith has, in a recent article (5), presented an excellent discussion of the fallacy inherent in the notion that "If the child does not learn, the teacher has not taught" and in its converse proposition that learning is dependent upon teaching. It is quite apparent that repetitive practice may lead some students to extrapolate concepts or generalizations that have never been formally presented to them. It similarly is possible for teachers to teach and for pupils *not* to learn. This may occur even when the teaching is "good" by any number of criteria. "Good" teaching is not necessarily "effective" teaching.

Smith has used this kind of logic to justify the legitimacy of investigating teaching in its own right ". . . without becoming entangled in the web of arguments about the processes and conditions of learning." This point of view has considerable merit. We know pitifully little about the "strategies and tactics" of teaching. Thus, the teacher's operations that have been selected as of particular

pertinence to the present conceptual scheme for the instructional gestalt may appear to be extremely elementary. The instructor variables cited here undoubtedly need considerable revision and refinement in the light of current investigations of teaching *per se:*

(a) The instructor's effectiveness as a communicator as evidenced both by his verbal and non-verbal behavior.

(b) The instructional objectives that he manifests to his students by his behavior in class and by his examining procedures, *not* by his verbalizations about his objectives to the investigator. The instructor, for example, who maintains that he is attempting to stimulate critical thinking but who tests for rote recall of facts actually reinforces rote memorization.

(c) Adient-avoidant behavior by the teacher relative to his students. Instructors differ considerably in the extent to which they are interested in students as persons and in the extent to which they derive genuine satisfaction from developing personal relationships with them. Although this variable may be of minor consequence in large-group instructional gestalts, it probably bears considerably upon the teacher's own sense of gratification and personal worth when he teaches such classes.

*Course Variables.* At least two features of the course are important to the gestalt: (a) the subject matter area and (b) the level of presentation (elementary or advanced, third or sixth grade level, etc.).

This conception of the instructional gestalt provides a basis for comprehensive thought about the teaching-learning process in terms of the interactions of four classes of variables. For any given course, the effects of various kinds of instruction can be conceptualized and empirically studied in relation to variations in the classroom environment, in the characteristics of students, or in the relevant activities of the instructor. Since our interest is in the educative impact of the gestalt, we must conceive and devise methods of applying relevant and meaningful criteria for estimating the degree of such impact.

## *Criteria*

These criteria must, then, be derived from some prior delineation of course objectives. It is almost axiomatic, of course, to expect different interactions within the gestalt when its impact is assessed through indices of factual recall and when it is estimated by means of a measure of critical thinking. Unless the goals are clear in advance, there is no valid basis for studying outcomes.

But goals must be conceptualized in a comprehensive fashion if we are to explore the potentialities of the gestalt most fruitfully. Concerned with the complexities of the teaching-learning process, our angle of focus on educational objectives must be wide enough to accomodate possible differences in the aims of the two classes of persons who are parties to the classroom enterprise, students *and* teachers. When we think of criteria, then, against which to evaluate the impact of the instructional gestalt, we must include both those that are primarily *student-oriented* and those which are *teacher-oriented.*

Six *student-oriented criteria* have been selected as meaningful dependent variables for use in exploring the instructional gestalt. They are cited with the full realization that the listing is not comprehensive. This list does, however, provide a rather broad base for evaluating the effectiveness of learning.

1. Acquisition of factual information in the subject area.
2. Acquisition of general concepts and problem-solving facility in the subject matter.
3. Development of course-related attitudes.

4. Attentiveness to the presentation or discussion during the class period.
5. Quality of student thinking during the class period while the presentation is being made or the discussion conducted.
6. Impact of the gestalt upon the students' out-of-class activities: vocational choice, leisure reading, etc.

It would be inappropriate, in view of the earlier discussion of some of the implications of the use of media in education, to limit research upon the instructional gestalt to student-oriented criteria. Teachers, after all, have a vested interest in the teaching-learning process. Hence the evaluation of the impact of the gestalt must include such *teacher-oriented criteria* as:

1. Feelings of personal satisfaction and professional gratification. This criterion cluster must reflect teachers' perceptions about their role and status within the school, community, and profession.
2. Tenure within the profession. It is conceivable that certain combinations of variables within the gestalt may encourage either more or less professional stability than do other combinations.

## *Values of the Scheme*

While it is apparent that this kind of framework does not in itself provide us with any answers, it affords a systematic scheme for asking useful questions. It has a considerable potential for helping us in the organization of some of the things we already know, and it may be of considerable assistance in the generation of hypotheses to fill some of the gaps in our knowledge. Most advantageous of all, it concentrates our attention on the basic teaching-learning process and helps us to make our concerns more pointed and more sophisticated when we consider such innovations in instruction as television, auto-instructional devices, and other products of our technological age.

As enrollments swell and as our educational needs become progressively more crucial in relation to world developments, it is essential that our thought about educational matters be both subject to the checks of relevant and rigorous research and that it escape the inroads of mere technical faddism. The best safeguard here is a conceptual framework for theory and investigation alike that will yield increasing knowledge of what actually happens to teachers and students as instructional procedures are varied and new methods introduced. Such a framework must have comprehensiveness, giving due attention to the complex interactions among the number of factors that compose the instructional gestalt. It must also provide for a steady and probing search into the dimensions of the teaching-learning process, restricting the probability of our being sidetracked into profitless argument or meaningless and irrelevant research.

It is in the interest of this aim that the concept of the instructional gestalt has been outlined. The determination of its ultimate utility depends on the degree to which it permits thoughtful educators to organize our present knowledge in more effective ways and on the extent to which research workers are able to generate new hypotheses from it and to test them in contexts that have educational cogency.

## *Summary*

This paper began with a discussion of a series of investigations concerned with instructional television and of some of the implications of increased utilization of new media in education. It ends, however, on quite a different tack. Some of the research reported in the literature is criticised on the ground that it is conducted in the absence of an underlying conceptual framework. The absence of such a framework leads to three specific areas of criticism:

(1) There is a pronounced tendency to neglect what has been termed the "instructional gestalt" in favor of investigating the impact of a single class of variables which may contribute to the gestalt. The effect here may be that of obscuring certain critical interactions among variables.

(2) Many studies have treated classroom environments which are essentially divergent as being alike for experimental purposes. This risks the masking of results which would have been apparent had the environment been sufficiently defined and controlled.

(3) Too many studies of the teaching-learning process are predicated upon the use of such a relatively primitive criterion as acquisition of factual knowledge. This creates serious deficiencies in our accumulated understanding of the comparative effectiveness of various kinds of instructional gestalts with respect to the realization of other instructional objectives and with respect to the teacher's perceptions of his own role and status.

This critique is followed by an elaboration of a rudimentary conceptual framework for educational research, including but not limited to media studies. Although this framework fits the writer's biases and predispositions at the present time, it is anticipated that other investigators may disagree with the particular selection of variables selected for inclusion in the scheme.

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# Contributors

It has probably been inevitable that education should one day undergo some kind of technological revolution. Technology reaches into the most remote and intimate corners of our lives, and there is a sense in which we can wonder only at its lateness in touching so sharply our conceptions of the teaching-learning process.

In this number of the *Record,* we proudly offer three discussions of the educational implications of such new instructional technologies as teaching machines and television. Dr. **Eugene H. Galanter,** professor of psychology at the University of Pennsylvania and lately a fellow of the Center for Advanced Study in the Behavioral Sciences, treats teaching machines from the point of view of what they can tell us about the structure of the human learner. Similarly, Dr. **Laurence Siegel,** Director of the Institutional Research Service of Miami University in Oxford, Ohio, uses research in the new instructional media, particularly television, to develop a new concept of the "instructional gestalt" and to indicate some new characteristics and directions for thought and investigation. Dr. **Ernst A. Rothkopf,** a knowing research psychologist with the Bell Telephone Laboratories and one of our foremost experts on communication, quietly demonstrates the superior importance of the *ideas* of programming teaching machines over the sheer *techniques,* and then he illustrates the applicability of these ideas to the writing of improved classroom materials *without* recourse to machines. While all three of these contributors are "for" our new technological devices, it is clear that their interest in them stems from the promise they hold for an enlarged understanding of human beings and a more effective human use of the educational process.

This emphasis on human values is maintained in "Motion, Action, Words," in which **Kenneth Burke** explores the interrelations of the physical sciences, the behavioral sciences, and the humanities in our attempts to cope with the frightening proximity of inflammatory world tensions to a growing stockpile of nuclear weapons. Those who know Mr. Burke's *Permanence and Change, A Grammar of Motives,* or *Attitudes Toward World History,* among other books, will be pleased but not surprised by the evocative quality of his present piece.

In the same fashion, anyone interested in the humanizing values of literature will be struck by the wisdom and insightfulness of Mr. **T. S. Eliot's** ideas about teaching the appreciation of poetry. Probably the greatest living poet in the English language, Mr. Eliot needs neither an introduction nor a statement of his qualifications. It will come as news to some, however, that his thoughts about teaching are as provocative as his ideas about poetry.

Exercising a somewhat different brand of cultural criticism, Dr. **Theodore Brameld,** whose *Ends and Means in Education* is a familiar and valuable book, analyzes President Conant's influential educational ideas in this issue of the *Record;* and Dr. **Paul Woodring,** consultant to the Ford Foundation and editor of the new *Saturday Review* Educational Supplement, presents, for the first time, a statement of the principles underlying the much discussed program of the Fund for the Advancement of Education in teacher education.

Finally, our cultural perspective this December is shifted to Asia, where technology and its human use is a particularly crucial issue, by Dr. **Minoru Shinoda,** assistant professor of Oriental history at the University of Hawaii.

T. S. ELIOT
*London, England*

# On teaching the appreciation of poetry

I HOLD NO DIPLOMA, certificate, or other academic document to show that I am qualified to discuss this subject. I have never taught anybody of any age how to enjoy, understand, appreciate poetry, or how to speak it. I have known a great many poets, and innumerable people who wanted to be told that they were poets. I have done some teaching, but I have never "taught poetry." My excuse for taking up this subject is of wholly different origin. I know that not only young people in colleges and universities, but secondary school children also, have to study, or at least acquaint themselves with, poems by living poets; and I know that my poems are among those studied, by two kinds of evidence. My play *Murder in the Cathedral* is a set book in some schools: there is an edition of the English text published in Germany with notes in German, and an edition published in Canada with notes in English. The fact that this play, and some of my other poems, are used in schools brings some welcome supplement to my income; and it also brings an increase in my correspondence, which is more or less welcome, though not all the letters get answered. These are letters from the children themselves, or more precisely, the teenagers. They live mostly in Britain, the United States, and Germany, with a sprinkling from the nations of Asia. It is in a spirit of curiosity, therefore, that I approach the subject of the teaching of poetry: I should like to know more about these young people and about their teachers and the methods of teaching.

For some of my young correspondents seem to be misguided. Sometimes I have been assigned to them as a "project," more often they have made the choice themselves—it is not always clear why. (There was one case, that of an Egyptian boy, who wanted to write a thesis about my work, and as none of my work was locally available and as he wanted to read it, asked me to send him all my books. That was very exceptional, however.) Very often the writers ask for information about myself, sometimes in the form of a questionnaire. I remember being asked by one child whether it was true that I only cared to associate with lords and bishops. Sometimes a photograph is asked for. Some young persons seem to want me to provide them with all the material for a potted biography, including mention of my interests, tastes, and ways of amusing myself. Are these children studying poetry, or merely study-

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ing poets? Very often they want explanations, either of a whole poem ("what does it mean") or of a particular line or phrase; and the kind of question they ask often suggests that their approach to that poem has been wrong, for they want the wrong kind of explanation, or ask questions which are simply unanswerable. Sometimes, but more rarely, they are avid for literary sources, which would seem to indicate that they have started too early on the road to Xanadu.

### *The Older Pattern*

Now, when I was young, this sort of thing did not happen. I did study English at school, beginning, thank God, with grammar, and going on to "rhetoric"—for which also I am grateful. And we had to read a number of set books of prose and verse—mostly in school editions which made them look peculiarly unappetizing. But we never were made to read any literature which could be called contemporary: Tennyson could hardly be called "contemporary" by the time I had to study some of the *Idylls of the King*. I must admit that at the turn of the twentieth century there were precious few great poets about, and still fewer poets whom the authorities would have considered suitable for our perusal. Swinburne would hardly have done in those days; I don't know whether he has reached the school curriculum today. Yeats was still a minor poet of the 'Nineties. But even if Trumbull Stickney and George Cabot Lodge, two poets of whose work I remain ignorant to this day, had been famous instead of merely respectable, I doubt if my school authorities would have set any of their poetry for us.

No. Not only were we not encouraged to take an interest in the poetry actually being written, but even had we been, I doubt whether we should have thought of entering into correspondence with the authors. Some of the juvenile correspondence I receive seems to be instigated by the teachers, but the greater part does not. Indeed, some of my letters, I suspect, are inspired by a desire to score off teacher and the hope of getting some statement from the horse's mouth which will be a direct contradiction of what has been taught. (I confess that this last type of letter is one which I sometimes take pleasure in answering—when teacher seems to me to have been wrong.) But my point is that this pressure upon the poet from young people who have been compelled to read his work is a modern phenomenon. I don't believe that Tennyson and Browning, Longfellow and Whittier (to say nothing of Poe and Whitman, poets whose works we did not study) were embarrassed by juvenile correspondence choking up their letterboxes. The teaching of the contemporary literature, the introduction of the young to poetry by living poets, is something that came about in my time without my being aware of what was happening. I have had other surprises of this kind. When I returned to give a course of lectures at Harvard in 1932, after seventeen years' absence from America, I looked out of my window and saw a bird which arrested my attention because it looked like a starling. As a boy I had been an eager bird-watcher, and I knew most of the resident and migratory birds of New England, but I knew no bird with that peculiar stumpy tail. On inquiry, I found that it *was* a starling: that bird had arrived and multiplied in America while I wasn't looking. The starling has come to stay, and so, I think, has the academic study of the work of living authors.

I do not wish to suggest that I deplore the introduction of the young, as a part of their education, to the work of living authors—to the work of *some* living authors. Nor am I suggesting that I think

that the methods of teaching are altogether wrong. All I aim to indicate is that the teaching of contemporary poetry is a difficult task, and that contemporary poetry cannot be taught by exactly the same methods as are suitable for poetry of the past. And I mean by "poetry of the past" the poetry of any period as soon as that period has become a part of history. The teacher who aims at teaching pupils to appreciate contemporary poetry, to distinguish between the good and the bad, the genuine and the spurious, the original and the imitative, to enjoy the best and only the best, needs himself to have both enthusiasm and discrimination. He needs to be as well educated, as scholarly in his knowledge of the literature of the past, as the teacher who confines his tuition to the literature of the past; and he needs independent good taste.

## *Poetry as History*

I am not suggesting that to teach the curriculum as it was taught when I was a boy, we can dispense with enthusiasm and good taste. But that curriculum was limited to authors whose place had been pretty well fixed by the judgment of time. It included a couple of plays of Shakespeare, several of Milton's minor poems, and selections from standard English and American authors down to the latter part of the nineteenth century. These were authors of whose works, it could be assumed, no educated man should be wholly ignorant. And here, as I have already asserted, is the important difference: the poetry of the past is already a part of history. No man can be called educated if ignorant of the history of his own country, or his own race, or his own language: indeed we should know something of the history of civilization, of the struggle of man to raise himself from savagery to the condition of the highest triumphs of the arts and sciences, of religion and morals. And our historical knowledge of any past age is incomplete unless we know something of the literature of that age. To enter imaginatively into the life of men in a past age we need everything we can learn from their literature, and particularly from their poetry, of the way they thought and felt. Thus, the teacher of the literature of the past may find his task to be primarily that of an historian, though he should also be a lover of that literature and have the capacity to communicate his feeling for it to his pupils. But the poetry of the present, the best of which *will become* a part of history, cannot be studied in exactly the same way as the poetry which is already history.

Let me at this point consider first the drawbacks to that school study of the poetry of the past which ignores the fact that poetry is something which *goes on being written*, which is being written now while the pupils are sitting at their desks construing *L'Allegro* or *Il Penseroso*, and that the poet hopes that people will read it for enjoyment. And then let me consider the disadvantages of overemphasis upon actuality which ignores the fact that much of the poetry written in the same language in the past is as good, and that some of it is better, than what is being written now.

The great weakness of the method by which I was introduced—academically introduced, I mean—to English poetry was that it did not help me to enjoy it. I think that many people have suffered in the same way from their introduction to the plays of Shakespeare: I took a dislike to *Julius Caesar* which lasted, I am sorry to say, until I saw the film of Marlon Brando and John Gielgud, and a dislike to *The Merchant of Venice* which persists to this day. Perhaps the fact that I had to memorize and declaim, in front

of the class, Antony's oration and Portia's quality of mercy, and that I was a very poor declaimer, may have had something to do with it. But I also disliked *L'Allegro* and *Il Penseroso*. I am thankful that I did not have to study *Lycidas* in the same way. Coleridge's *Ancient Mariner* barely survived. I have no fault to find with our teacher. We had examinations to pass; and it was his business to see that we should be able to answer the questions.

I do not know that there is any better way of studying English literature at that stage; and it may be that a few plays and poems must be sacrificed in order that we may learn that English literature exists, and that an orderly historical acquaintance with it is desirable. We also, I remember, had a history book of English literature to study, and we had to learn something about the great writers of every period from the Age of Shakespeare to the end of the nineteenth century. The knowledge that we acquired served a purpose; and I do not believe it would have served that purpose so well if the emphasis had been on appreciation instead of on an orderly outline of literature and some information about the chief historical reputations. After all, how many boys and girls of thirteen or fourteen can appreciate Shakespeare or Milton? I didn't.

## *The Discovery of Poetry*

I think I have mentioned somewhere among my essays that my first experience of intense excitement from poetry came when I was fourteen, and came, not from anything put in my way by my work at school, but by happening to pick up at home a copy of Fitzgerald's *Omar Khayam*. And, at the risk of repeating myself, I will suggest that it is at or on the approach of puberty that a boy or girl may suddenly discover that poetry is capable of giving a kind of delight hitherto wholly unsuspected. Very likely this illumination will come as the sudden shock of a particular poem: a poem discovered by oneself or presented by an older person or by one's teacher. But it will probably not be one of the poems that one has had to study in a school text supported by notes (and for passing examinations the notes may be more important than the text!). I am not sorry that I was made to study certain things of Shakespeare and Milton in the way I have described. But the discovery of poetry is a different experience altogether, and the discovery may be more important than the poem through which we make the discovery. Our first "discovery" of poetry—say at fourteen or fifteen or sixteen—may be through a poem of which, after our acquaintance is wider and our taste more developed, we cease to think very highly.

There are, in fact, some poems and some poets whose function seems to be to awaken our capacity for enjoyment, to retire later on to a lower (but still, most often, honorable) place. The earlier poems of Byron, for instance; *The Shropshire Lad* of A. E. Housman; the poems of Rupert Brooke. The greatest poets are those whom we have to grow up to and whose work we appreciate more fully as we mature. At sixteen I discovered (by reading a section of our history of English literature which we were *not* required to read) Thomson's *City of Dreadful Night* and the poems of Ernest Dowson. Each was a new and vivid experience. But *The City of Dreadful Night* or Dowson's *Impenitentia Ultima* would hardly, even today, be considered suitable for academic study at the age I have in mind. It is in fact *necessary* to choose works by the greatest writers for us to study at an age at which we are not yet mature enough to enjoy them.

## *The Training of Taste*

Let me now consider the situation when our emphasis, in teaching children of the same ages, is on enjoyment rather than information, and upon contemporary poets rather than upon a selection of the great classics. This offers the teacher greater liberty, but prepares for him greater pitfalls. That rough and ready valuation, ordinarily called "the verdict of history," has not yet been passed, and the teacher must follow his own judgment as to what poets, and what poems, he should choose for initiating his pupils into the delights of poetry. There is plenty of contemporary poetry to serve the purpose. But opinion about the relative importance of living poets can vary widely, even among persons of taste, apart from the permanent chasm between those who lean towards what is called "traditional" verse and those who prefer the "experimental." And the successful teacher, who teaches the poetry of his choice with enthusiasm, will be in danger of implanting his own personal tastes in the minds of his pupils, or (what is worse) teaching them to parrot opinions which they are too passive to share. But even if we postulate an ideal teacher of impeccable taste—and I have never known anyone incapable of going wrong at one time or another about living authors, and I include myself in this universal fallibility—that teacher could rouse enthusiasm but could do little to train taste and understanding. For without some knowledge of the poetry of the past and enjoyment of what we know, we cannot really appreciate the poetry of the present.

The dangers of a concentration of interest upon contemporary poetry appears most clearly and painfully when the reader aspires to write poetry himself, or herself. I have never judged a poetry competition, but I have known those who have. One friend who had on one occasion undertaken to read a great number of such contributions was appalled by the evidence of the meagerness of the contestants' knowledge of poetry of the past. Most aspirants had some acquaintance with the poetry of John Donne; a good many had read poems by Blake; and coming down to recent times, they were familiar with the work of Gerard Manley Hopkins and William Butler Yeats. There are would-be poets who write regular verse with, at best, dull metronomic accuracy: modern poetry is unknown to them. There are others who write "free verse" with an ear untrained by the practice of regular verse: they have probably dieted solely on contemporary verse.

## *Past and Present*

It is not, however, for students who aspire to write poetry, but simply with those capable of becoming intelligent and sensitive readers, that I am chiefly concerned. I maintain that no one can go very far in the discerning enjoyment of poetry who is incapable of enjoying any poetry other than that of his own place and time. It is in fact a part of the function of education to help us to escape—not from our own time, for we are all bound by that—but from the intellectual and emotional limitations of our own time. It is a commonplace that we appreciate our home all the more fully and consciously after foreign travel; it is not such a commonplace to assert that we can appreciate the poetry of our own time better for knowing and enjoying the best poetry of previous ages. We understand and appreciate our own language the better for having some command of a foreign language. Those whose knowledge of poetry in the English language extends no further than to the im-

mediate precursors of the poetry of our time, such as Hopkins and Yeats, or whose knowledge of the past is limited to the poetry extolled by some persuasive critic of the day (like myself), are limited in their understanding of the poetry that they do know. If, as I believe, poetry plays an important part in the process of education, then these readers are uneducated.

You may think at this point that I have reached an *impasse*. On the one hand, the historical approach to English and American literature, with obligatory reading, of a selection of classics, seems unlikely to awaken any appetite or curiosity that would lead to independent reading; nor does it present poetry and prose as living arts. On the other hand, the study of contemporary poetry, while it may be an immediate stimulant, may encourage a provincialism of taste—for provincialism in *time* is as deplorable as provincialism in *place*—which is the opposite of educative.

To me it seems that the two ways of approach to poetry should be combined, so that young people might be brought to see literature—and poetry especially—both in its historical aspect and in its actuality as a permanent heritage and as something which is still going on, as a necessary part of knowledge and as something to be enjoyed. Here are involved two different, though related meanings of the word *understanding*. In the teaching of the great literature of the past, *understanding* is primarily what ensues from a knowledge of historical and biographical facts, the conditions under which a masterpiece was written, the peculiarities of idiom and vocabulary which mark it as of a different age from ours, etc. In approaching a contemporary work, a poem by a living poet, our understanding is primarily a matter of insight. I know of one teacher who, without any preliminary explanation, played to her pupils a gramophone record of a poem by a living poet. She played it twice and then told her girls to write down their feelings and impressions, to put in words as well as they could what this poem had meant to them. And I know that for one of her pupils at least—they were girls of fourteen—the impression that this poem made upon her opened the path to understanding not only of other poems of the same poet, but to poetry of earlier times, indeed to all poetry. And the teacher had not told the class that they were to admire this poem, still less what they were to admire about it; least of all had she given any hint as to what it was about or what it meant. She had chosen wisely and with taste, but had left the poem to do its own work.

This incident seems to me to suggest that at that age—from fourteen to sixteen I should say—when the sensibility begins, if ever, to respond passionately to poetry, the poetry of our own age may be able to make a more immediate impact than that of earlier generations. It is not merely that there are no difficulties of style and idiom; not merely that there is less oppression by the mass of critical opinion. There is more than enough of the latter: and may I suggest in passing that the young should be encouraged to read poetry by living poets rather than books about contemporary poetry—that they should know and love certain poetry before they read *about* that poetry. I think that young people often recognize obscurely that the poet speaking to them is of their own time and that his sensibility and theirs have something in common.

### *The Ideal Teacher*

I do not believe that the work of living poets should be taught formally. I do not believe that youngsters should take ex-

aminations in it. I think that the choice of poems to present to a class should represent the taste of the teacher, not be set by a board. Unless the teacher is a person who reads poetry for enjoyment, he or she cannot stimulate pupils to enjoy it. Nor should the young have a great deal of contemporary verse forced upon them; at this stage we are not concerned to equip young people with a familiarity with the names of all the living poets of reputation, but with starting them on the way to enjoying poetry.

I am assuming, of course, that the teacher who introduces them to modern poetry will be the same teacher who takes them through their annotated textbooks of the classics and who wants them to pass their examination on these texts with credit. Perhaps I am merely clamouring for the Ideal Teacher. But don't "educationists" sometimes forget, in their teaching about teaching, that the one essential for good teaching is the good teacher? The good teacher then will instruct his or her pupils well in the historical understanding of literature, and at the same time will lead those of them who have the capacity to see that the literature of the past, about which the educated person must be informed as a part of history, is also literature to be enjoyed, and that without enjoyment it is meaningless. The good teacher will make pupils aware that literature is a continuous activity, and that more literature is being made even while they are busy with that of the past. In introducing the pupils to modern poetry that the teacher likes, he will be reminding them of the essential part of enjoyment. For it doesn't matter so much, in my opinion, that the teacher's enthusiasm should be aroused by the very best contemporary poetry—in other words, the poetry of which I myself approve—as that the enthusiasm should be infectious. The pupils capable of developing good taste will eventually discover for themselves the better poetry, and as for the others it is probably better that they should like the second rate, the unoriginal, than that they should not like any poetry at all.

My Ideal Teacher, accordingly, will teach the prescribed classics of literature as history, as a part of history which every educated person should know something about whether he likes it or not; and then he should lead some of the pupils to enjoyment and the rest at least to the point of recognizing that there are other persons who do enjoy it. And he will introduce the pupils to contemporary poetry by exciting enjoyment: enjoyment first and understanding second. It may be only by reading such poetry to them as an extracurricular activity, or it may be by a reading or a gramophone record, and then asking the class to set down impressions and reactions. I think that such an introduction to poetry is justifiable even for those pupils who never come to show any love for poetry or any intelligent and sensitive appreciation of it. And the pupils who have some aptitude for enjoyment and understanding of what is good in literature (and as this is a question of degree, there can be no clear division between the sheep and the goats) will find that their knowledge of the great poetry which has had the approval of successive generations will sharpen their discrimination and refine their enjoyment of the poetry which is being written in their own time, and their enjoyment of the poetry written in their own time will help them towards enjoyment of the classics of literature. For our own poetry of today and that of our forefathers, the foundations upon which we build and without which our poetry would not be what it is, will eventually be seen as forming one harmonious whole.

# Issues & Items

*Eternal vigilance.* The price of liberty still seems to entail a constant and responsible alertness to creeping and blatant encroachments on it. Nowhere does this ancient point hold with greater seriousness than in the realm of ideas. And it cannot be underscored too heavily that the concern applies as strictly to ideas with which we disagree, even to ideas that lack soundness, as to our own or those that strike us as valuable. With intellectual freedom the very foundation of our educational system and our cultural life, those devoted to our schools and colleges may well respond with articulate vigor to three recent events that suggest that McCarthyism is neither dead nor impotent despite the Senator's departure from our scene.

First, a Michigan teacher was recently sentenced to a ninety-day jail sentence by Justice of the Peace Howard Magoon on the ground that he had assigned his students a chapter in Albert Camus's *The Stranger*, an "obscene" book. The story has a happy ending but one that hardly lacks its own terrors. After the teacher had spent twelve days in prison for asking pupils to become acquainted with a Nobel Prize-winning novelist, (1) it was discovered that the law under which he was convicted had been repealed three years previously, and (2) Justice Magoon's decision was reversed by a circuit court.

Second, the censorship of textbooks is the explicit business of two organizations, the Daughters of the American Revolution and America's Future, whose impact is beginning to be felt by schools and colleges, publishers, and text writers. Both groups constitute dubious sources of pressure, although America's Future verbally disclaims any intention "to tell the schools what textbooks they should or should not use."

The DAR has for at least two years been reviewing elementary and high school texts against such criterion questions as these: Does the book develop pride, confidence, and trust in the United States? Does it refrain from partisan presentations of world government and the United Nations? Does it avoid references to works by Marxist and pro-Communist authors unless pupils are informed to this effect? Only one-fifth of the textbooks reviewed pass this kind of muster in the DAR's judgment, and the Daughters have released a list of about fifty "satisfactory" and some 200 "unsatisfactory" books. The latter are characterized by such comments as "emphasizes such topics as prejudice, racial minorities, bigotry, social acceptance, and mental health" or, in the case of some life-adjustment workbooks, "includes impertinent questions calculated to reflect upon the family's economic status." The DAR also finds that some literature texts incorporate too much realism, some arithmetics provide too many exercises in income tax computations, and some music books offer too many folk and work tunes.

Local chapters of the "revolutionary" Daughters are urged to take the list to the superintendent, principals, and school boards of their communities to ask how texts are selected. They are also directed to "consult" with community leaders on

programs for reintroducing "satisfactory" books in the schools.

America's Future, located in New Rochelle, N. Y., publishes pamphlets, produces a radio program for conservative publicist John T. Flynn, and sponsors a textbook evaluation committee of twelve members. To date, about 75 high school texts have been reviewed to combat the notion that,

> Many of our young men and women are coming out of our high schools and colleges with a contempt for American ideals. . . . Much of this fuzzy thinking can be traced to the textbooks used in our schools today.

Reviews run to about 1500 unminced words about what is liked or disliked about each book and are prepared by a group which includes E. Merrill Root, author of *Brainwashing in the High Schools*, Professor Charles C. Tansill, an open prewar defender of the German and Italian governments, Dr. Neil Carothers of Lehigh University, and others. When at least 400 reviews have been prepared, America's Future plans a national publicity campaign to call attention to their existence and to their availability on request.

Finally, the October issue of *Harper's* contains a report by Kenneth Tynan, drama critic for the London *Observer* and recently guest critic for the *New Yorker*, on his subpoenaed appearance last May before the Senate Internal Security Subcommittee. His behavior was questioned on two scores. First, he had produced a show for Britain's Associated Television on the general subject of intellectual nonconformity in America. The telecast presented such figures as Norman Cousins, Kenneth Galbraith, Robert Hutchins, Lawrence Ferlinghetti, Dalton Trumbo, and others, including one admitted member of the Communist Party. Second, Mr. Tynan signed an advertisement for a group called "The Fair Play for Cuba Committee," protesting as incomplete and sometimes inaccurate some of the press coverage of the Castro revolution.

Without having seen "We Dissent," the English TV show, and with a conviction that Fidel Castro's rebellion leans heavily on Soviet support and is, whatever its original intent may have been, a threat to democracy in the Western Hemisphere, one nevertheless finds it easy to take pride in almost anything that indicates America's commodiousness with respect to intellectual dissent. On the other hand, one can justifiably take alarm at this kind of Senatorial concern with ninety-minute London telecasts and protests about the factual adequacy of journalism's treatment of Cuba. The alarm becomes stronger when one reads Mr. Tynan's report that his interrogators asked him, an English subject, if he was aware that President Eisenhower had stated that the Castro regime was a menace to the Americas and if he felt justified in opinions openly defiant of those of the President of the United States!

It is not only that this sort of thing is a dubious way of either illustrating our own traditional passion for freedom of speech and thought or the marked contrast between our values and way of social life and the Soviet Union's. In these events, one finds the ominous shadows of forces that would curtail the intellectual exploration of all solutions to our major problems except those regarded as wise by some self-serving group. When such shadows begin to lengthen, they sooner or later fall on our classrooms, and in that kind of darkness both our culture and its entire future is imperiled. Without the interplay of free criticism, there can be no diversity of vision. And is it not without *diversity* of vision that the people are most liable to perish?

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# The Ford Foundation and teacher education

*Prior to 1957, the Ford Foundation's responsibility for the improvement of teacher training was delegated to the Fund for the Advancement of Education, established in 1951 to work in the field of formal education. In 1957 the officers and staff of the Fund became also the staff of the Education Division of the Ford Foundation. The Fund continues to operate as a separate organization under its own board of directors, but many of the programs which were initiated by the Fund now receive continued support from the Foundation. For purposes of this article, no distinction is made between the policy of the Fund and that of the Education Division of the Foundation.*

*In preparing this paper the author has drawn freely upon various Fund and Foundation publications, including the Annual Reports.*

A grant-making philanthropic organization must be selective. However large the funds available to it may be, they are never large enough to provide assistance to all the worthy projects it is asked to support. When the Fund for the Advancement of Education was established, there followed a flood of applications for assistance, the acceptance of which would have required resources many times as great as those available. The problem for the Directors and staff was not whether the Fund should be selective, but on what principles it should select.

There was obviously the danger that the Fund might spread its resources too thin. In an effort to be useful at too many points, it could easily fall into what an early officer of the Rockefeller Foundation called "scatteration giving" and thus fail to be of any real value to education anywhere. Given limited resources, selection was inevitable. Given a desire to be of maximum usefulness, concentration was inevitable. And, if in concentrating its resources, the Fund was to avoid a haphazard or an accidental application of them, it was necessary to formulate policies and to develop a program based upon an analysis of the major needs of education and of the role of a Fund working for educational improvement.

The role of an educational Fund stems from its position as a privately chartered, tax-exempt institution. It assumes responsibilities that differ from those of either tax-supported institutions or private colleges and universities. It cannot carry the burden of the established public or private programs, and it should not undertake to support the small fraction of these

established programs which its resources might be sufficient to assume. It can justify its existence only as it supports promising developments in education for which neither tax funds nor the resources of other private institutions are available.

The FAE was established for the purpose of advancing or improving American education. There can be no improvement without change, and the Fund has looked upon the resources available to it as risk capital to be used, not in augmentation of the status quo, but for the support of experimental programs that hold promise of changing and improving education in American schools and colleges. From the first, it was expected that there would be some successes and some failures among its programs. Had it been known with certainty which new programs would yield the best results, the schools and colleges could have made the necessary changes themselves without waiting for assistance and encouragement from the outside.

It has been the policy of the Fund, ever since its establishment, to concentrate upon a limited number of basic problems which seem especially important to the advancement of education and to support promising experiments and new developments which might help to solve these problems.

### *FAE Objectives*

The Fund's program has been directed toward five basic problems and five corresponding objectives: (1) the improvement of teaching, (2) improvements in the curriculum, (3) the clarification of the purposes and functions of education, (4) the equalization of educational opportunity, and (5) improvements in the management and financing of educational institutions.

Education becomes formal when it takes place in an institutional setting, and in such a setting the teacher takes on an importance second only to that of the pupil himself. For this reason, the Fund has regarded teachers and teaching as its most important area of concern. Well over half its resources have been devoted to the support of a wide variety of experiments and demonstrations designed to attract able men and women into the teaching profession and to improve their professional preparation. In teacher education, which is closely interrelated with all other problems of education, some central problems of educational philosophy come sharply into focus. Until we know what kinds of schools we want and what we want these schools to accomplish, we cannot decide what kind of teachers we need or how they should be selected and educated. The statement and clarification of the American philosophy of education is the primary responsibility of educational leadership, for all else is dependent upon it. The Fund has supported, and will continue to support, efforts of educators to achieve this clarification. In selecting projects for support, it has given preference to those which appear to be based upon a clear philosophy and which will be administered by individuals and institutions with a clear understanding of what they are trying to accomplish in bringing about changes in the schools.

### *Influences on Policy*

To a considerable extent, the policy of any grant-making organization grows out of an interaction of its own convictions with those of the individuals and institutions that submit proposals to it and plan, direct, and administer its programs. The FAE has received proposals for the improvement of teacher education and recruitment from colleges and universities, state departments of education, public school systems, and individuals. When

the public judges its work, they judge it in terms of the success or failure of those who receive and administer its grants. The resourceful and imaginative people outside the Fund's staff who have planned and directed Fund-supported programs have therefore played a large part in determining Fund policy. If a project is notably successful, that success alters the direction of Fund policy; if it is a failure, the negative influence is no less great.

The policy that provides the basis for the Fund's work in teacher education has been influenced, too, by the situation that existed in American education during the decade of the Fifties, a period of alarming teacher shortage and widespread public discontent with the quality of our schools, both related to the dramatic increase in the population of school-age children. Policy has also reflected the convictions of officers and directors of the Fund regarding what is most important in education, and these convictions have been influenced, in turn, by the advice of hundreds of educators and other scholars and citizens who have been called in for consultation. Some of these have submitted written recommendations; some have been invited to attend conferences ranging in time from a few days to weeks or months, and others have served as consultants to the Fund for periods of from a few weeks to several years.

## *FAE's Basic Assumptions*

All programs for teacher education that have received Fund assistance provide for *both* liberal and professional education, and all rest upon the assumption that both are essential for teachers. The Fund's view of what is essential to sound teacher education has been stated many times but never more clearly or simply than in its *Report for 1954-6* (p. 31):

> The most promising new developments in the preparation of teachers have four characteristics. They provide for the liberal education of the teacher. They provide for an extended scholarly knowledge of the subject or subjects to be taught. They provide for the development of insights into child psychology, the learning process, and the meaning and purpose of education, through seminars in which these concerns are brought into relation with the problems experienced by beginning teachers. And, they involve arrangements for acquiring the art of teaching through carefully guided apprenticeships or internships on the principle that an art is best acquired by practice under direction and criticism.

The relative emphasis on each of these ingredients obviously must depend upon the background of the candidate at the time he decides to become a teacher. If he already is a liberally educated person, and if he has a scholarly knowledge of a subject, the major emphasis may properly be given to the development of professional knowledge and professional skills. If the decision to teach is made at the age of 17 or 18, and the candidate at that time enters upon a program for teacher education, a large part of his program must be devoted to liberal education if the teacher is to be anything more than a skilled technician.

During the early years of its existence a considerable portion of the Fund's effort was devoted to the professional preparation of individuals who already were liberal arts graduates because, in a period of acute teacher shortage, this provided a quick and effective way of providing able teachers for the classrooms. It cannot be assumed that all liberal arts college graduates are liberally educated but it seems reasonable to assume that such a graduate is more likely to be liberally educated than is the individual without such a background. The Fund has given a considerable amount of attention to the

problem of improving liberal education in order that the liberal arts degree may represent more nearly what it is supposed to mean. By lending its support to programs providing professional internships for graduates of selected liberal arts colleges, the Fund has tapped a neglected source of able teachers. In the years just prior to 1951, the "best" liberal arts colleges—those with high entrance standards and superior instruction—provided far less than their fair share of teachers for the elementary and secondary schools. The new programs supported by the Fund were designed to make careers in teaching more attractive to the graduates of such colleges.

Other Fund-supported programs provided professional preparation for older college graduates. This was necessary because a considerable number of older women who wanted to become teachers found the conventional programs, which were designed for younger and less mature students, incompatible with their wishes and needs. It was essential that these older women be encouraged to become teachers because the traditional source of supply for elementary teachers—unmarried women who taught for a few years after college graduation and before marriage—had almost dried up. During the 1950's, a much larger proportion of women married and became mothers at an early age; and it became apparent that if we were to have enough teachers, older women must be attracted into the profession. Many of these older women already were college graduates, but they had had no professional preparation. If they were to be attracted into the profession, it was essential that new programs be designed for them.

### *The Liberalizing Emphasis*

The Fund's emphasis on liberal education for all teachers grows out of a conviction that if a free nation is to survive and prosper, all citizens must, within the limits of their abilities, be liberally educated. If this is to be accomplished, it seems clear that the teachers themselves must be so educated.

The Fund takes cognizance of the vast range of individual differences in general capacity for learning, special abilities, and interests, and it recognizes that these differences make it necessary to provide diversity in curricula and educational procedures, but it does not believe that these differences are such as to preclude the possibility, or the importance, of a broad liberal education for a much greater proportion of our citizens than ever has received it. In a free society, all individuals, with the sole exception of those in custodial institutions, must make important decisions for themselves. If they are unable to do so, if their lives must be planned for them, the society no longer is free, however benevolent the controls may be. It follows that, in a nation of free men, universal liberal education is a necessity.

The liberally educated man is one who can make wise decisions independently. He can choose between good and bad, truth and falsehood, the beautiful and the ugly, the worth-while and the trivial. His education will improve his ability to make ethical decisions, political decisions, decisions within the home and on the job. It will enable him to choose and to appreciate a good book, a good painting, or a good piece of music. It will free him of provincialism and prepare him to understand cultures other than his own. It will enable him to make the many decisions necessary in planning a good life and conducting it properly. This education should be common to all and independent of vocational choice.

The responsibility for liberal education is by no means limited to the liberal arts college, nor can it be identified with the

A.B. degree. Much education that is truly liberating is found in the elementary and secondary schools and in the professional schools, and this is as it should be. The curricula of all our schools should be worthy of free men.

If he is to make wise independent decisions, the individual must be able to think critically and logically. But even the clearest and most logical thinking will not lead to sound conclusions unless it proceeds from sound premises. The individual must possess a vast amount of accurate information about his world, his culture, and himself. He must have a knowledge of political, social, and economic history because sound decisions in these areas cannot be made without background information of an historical nature. He must know the sciences because many important decisions rest upon a knowledge of the world and of man, and much of this information has been accumulated and verified through the scientific method. He must be familiar with great literature because literature offers another approach to knowledge of man and society and because literature deals with values, a realm in which he must make crucial judgments. He must know philosophy because all decisions, without exception, rest upon interpretations of reality, of truth, and of value. He must know mathematics because a knowledge of quantities and their relationship is essential to choice. The liberal education of all citizens requires a stress upon the fullest development of language because it is through language that man communicates with his fellow men and through communication that he achieves his greatest development as a man. These bodies of knowledge and these intellectual disciplines are not the ultimate end of education, but a grasp of them is essential to that end.

The process of acquiring a liberal education is never completed and should continue throughout adult life. Yet it seems best that a substantial portion of the adolescent period should be given to laying the groundwork which should be established before specialized or vocational education is undertaken. It seems obvious that liberal education should be an important part of the education of all teachers regardless of the age of the children they are to teach.

### *Specialized Scholarship*

The scholarly knowledge of a subject, needed by a teacher, is an extension of one selected area of his liberal education but one that should go far beyond the requirements of liberal education. All liberally educated individuals need an understanding of mathematical principles, but the mathematics teacher needs a much deeper knowledge. We all need a knowledge of history, but the history teacher must know much more. For the secondary teacher, the scholarly knowledge of his subject requires extended study at the graduate level, and for this reason the Master of Arts in Teaching Programs supported by the Fund provide for a considerable amount of time in graduate study *in an academic field*. The Fund takes the position that no amount of professional preparation or of professionalized subject matter can take the place of intensive graduate study in the substantive field.

### *Professional Training*

The professional knowledge needed by the teacher, as distinguished from skills in the art of teaching, falls into two general categories: (1) a knowledge of the nature of the child and of the learning process, and (2) an understanding of the school as a social institution, seen in its historical and philosophical context. The

first of these draws upon psychology for its principles and its research data, whereas the second draws upon history and philosophy and to a lesser extent upon sociology, political science, and economics. Most of the programs supported by the Fund have organized this knowledge into two blocks of time, taught sometimes by individuals and more often by teams. An effort has been made to avoid division into many small units or courses and to keep each unit firmly grounded in its parent disciplines. At the same time, an effort has been made to keep these courses or seminars closely related to classroom problems.

In many of the programs which have received Fund support, the conventional period of undergraduate practice teaching has been replaced by a longer period of internship or apprenticeship during the post-graduate period. This change was based upon a conviction that the usual period of practice teaching was too brief to provide an adequate introduction to the art of teaching and a conviction that if it were extended to a semester or a year, there would not be sufficient time during the undergraduate years for liberal education and for a study of the subjects to be taught. The fifth-year internship programs have had the added advantage of being open to those who made a late decision to enter the teaching profession, and many educators who made proposals to the Fund were convinced that this group included many exceptionally able individuals who should be encouraged to enter the profession. In many programs the intern receives a salary from the public school system, and this has made it possible to attract individuals who could not otherwise have financed a year of professional preparation.

In the internships, classroom practice is accompanied by professional seminars, running concurrently and held during the late afternoons or evenings or on Saturdays. Dealing with problems of classroom instruction, these seminars are usually conducted by those who supervise the apprenticeship teaching.

The internship also differs from conventional student teaching in that the apprentice, being present for a full day and usually a full semester, is perceived by the pupils as a "real" teacher or a member of a teaching team rather than as a "student teacher." In several programs the intern spends one semester in the classroom and a second on the campus of the university, taking graduate courses in his subject field. Professional courses in educational psychology and educational philosophy may be taken during this second semester or during summer sessions.

The extended internship represents an effort to make the apprenticeship period as realistic as possible, with the intern carrying important professional responsibilities for an extended period of time under close supervision, and to provide professional seminars closely related to the teaching experience. Teachers who have been trained under such programs appear to be almost unanimous in their enthusiastic endorsement of them.

### *Breakthrough Programs*

The programs described thus far are representative of the Fund's activity in teacher education prior to 1958. During the past two years the Fund and the Ford Foundation have provided large-scale support in some 28 colleges for a series of "breakthrough programs." These incorporate the major characteristics of earlier enterprises but go much further in directions that have been an outgrowth of experiences with the earlier ventures. Because they have been planned by the staffs of different universities, the break-

through programs, like all those that have received Fund and Foundation support, differ widely in some of their assumptions, their programs, and the hypotheses which they seek to test, but most of them include seven common characteristics.

First, they are designed to prepare teachers not for the self-contained classrooms of the past, but for the classrooms in which teachers are most likely to be teaching in 1963 or 1964 to the year 2000. Programs are developed to assure that teachers, while prepared for the schools of today, will be familiar with such innovations as ungraded classes, teaching machines, educational television, and team teaching with its flexible use of time, space, and personnel.

Second, the breakthrough programs are planned jointly by (a) university departments of education, (b) representatives of academic departments in the university, and (c) public school teachers and administrators. The academic professors and public school representatives who help in the planning and execution are regarded not as consultants or "resource people," but as fully responsible, voting members of the group.

Third, breakthrough programs incorporate changes in the elementary and secondary schools as well as in the colleges. The experimentation conducted in the public schools under these programs will provide the empirically systematic basis for changes in teacher education, and the programs for teacher education will, in turn, prepare teachers for the new programs which the schools are undertaking.

Fourth, a considerable amount of the responsibility for teacher recruitment, teacher education, and the introduction of the teacher to his profession is accepted by the public school itself. Obviously, such responsibility can be accepted only by public school systems which are well staffed with well educated and professionally prepared teachers and supervisory personnel; but in systems in which such personnel is available—and they are many—it is believed that they should play a much larger part in the preparation of teachers than they have played in the past.

Fifth, the breakthrough programs represent an effort (a) to bring teacher education into the mainstream of higher education in America by bringing academic professors and professors of education together for joint planning and (b) to bring about a better articulation of elementary, secondary, and higher education by bringing together college faculty members with teachers and administrators of the public schools.

Sixth, these programs build upon earlier Fund-supported programs by providing for (a) liberal education extending well beyond the sophomore year for all teachers, (b) scholarly academic instruction at the graduate level for all secondary teachers, (c) improved professional courses or seminars in educational psychology and educational philosophy that are firmly grounded in their parent disciplines and so planned as to avoid unnecessary duplication of content, and (d) an extended internship during the post-baccalaureate period under close supervision and accompanied by closely correlated professional seminars.

Finally, in most of the breakthrough programs, the prospective teacher gets his initial teaching experience as a junior member of a teaching team.

These new programs, as the name given them implies, attempt to break through the barriers of tradition that have made it difficult for the colleges to prepare teachers for a changing world in which new vistas of education are continuing to open up and, at the same time, to pro-

vide an education firmly grounded in first principles regarding the nature of man and his place in the universe.

The precise nature of the programs supported by the Foundation may be expected to change from year to year as some problems approach a solution and new ones emerge. It may safely be predicted, however, that they will continue to emphasize educational excellence, to be selective, and to use the funds available to them for the support of new programs which give promise of changing and improving American education.

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# Education in conservative key: The proposals of Dr. Conant

THE MOST QUOTED educator in the United States today is James Bryant Conant. His pronouncements on the state of secondary education are accepted with almost abject obeisance not only by vast numbers of laymen but by the great majority of teachers and school administrators. The appearance of his new report on the junior high schools is sure to receive much the same kind of acclaim as his *The American High School Today*, which, less than two years ago, made the best-seller lists—an almost unheard of accomplishment by a book on public education.

Within minority circles of our more theoretical and sophisticated students of education, however, Dr. Conant's views are often subjected to sharp questions. This being so, it is remarkable that few if any of these dissents have touched the wider public. What little has been written of a critical nature is confined to professional journals, and what is said analytically is rarely listened to by anyone except others of like mind. This is most unfortunate. Dr. Conant's potently influential views demand searching inspection by those substantial sections of the citizenry who profess genuine concern for the welfare of perhaps the greatest of all achievements of American democracy—its free public schools.

I should like to attempt this kind of inspection from the vantage point of my own field, educational philosophy. The task is not easy to accomplish, if only because the former President of Harvard University has never in his several books come to grips with the philosophic underpinnings of education. Indeed, as far back as 1949, when he published his *Education in a Divided World* (the book most fully outlining the ideas which he has since elaborated but modified only meagerly), Conant asserted that the validity of his propositions "must be tested not in terms of abstract educational theory but with reference to the state of affairs in the United States. . . ."

## *Essentialist Orientation*

Thus, if any categories of educational theory apply to Conant, eclecticism in one sense is most appropriate. His views and proposals are such a mixture of diverse theories that one suspects him of being a progressive educator in one paragraph and something different in another. Nevertheless, I believe it is possible to demonstrate that he is primarily an educational conservator whose assumptions

This article is taken from a chapter in Dr. Brameld's forthcoming book, *Education for the Emerging Age*, which will be published by Harper & Bros. early in 1961.

are accordingly closer to those of the essentialist theory than to those of any other. This theory, stripped to its bare bones, centers in the doctrine that the main purpose of education is to reinforce and perpetuate the social heritage.

As such, and with full regard for the sincerity of his dedication to the cause of education, the largest share of Conant's proposals not only prove to be unsuitable to the kind of culture in which we live, but they become a roadblock in the path of imperative reconstruction. For with the generous backing of the powerful Carnegie Corporation, he has convinced vast audiences that no important changes are needed at all. His most "radical" proposal is to reduce the number of small high schools in favor of consolidated ones. "Aside from this important change," he frankly declares, "I believe no radical alteration in the basic pattern of education is necessary in order to improve our public high schools." To be assured by the former president of our greatest university that nothing is seriously wrong and most things quite all right with American education is dangerously soporific at the precise time when critical alertness on the part of citizens is more imperative than in any period since the founding of the public-school system.

## *"Comprehensive" High Schools*

The "relatively minor changes" advocated by Conant center in secondary education. Particularly does he admire the "comprehensive high school," which accommodates students of a wide range of abilities and backgrounds. Vocational and academic courses are both included. The former consist of training for secretarial, clerical, mechanical, and agricultural positions after graduation, and are intended mainly for those who intend no further education. The latter are of two kinds—a required program of general education for all and an elective sequence tailored to the "academically talented."

The conservative quality of Conant's outlook begins to appear when we look at his curriculum of general education. It consists of four years of English, three or four years of social studies (including two years of history and one on American problems or American government), one year of mathematics (algebra or general mathematics), and at least one year of science, preferably biology or general physical science.

Millions of us who have graduated from run-of-the-mill American high schools any time in the past quarter-century or more have experienced much the same type of curriculum, with the possible exception of the senior social studies course. Even this course, however, has been provided by many high schools for a fairly long time.

The electives in which Conant is most interested are intended for the fifteen per cent adjudged to be academically talented. Four years of mathematics, four years of one foreign language, and three years of science are the major subjects. Art and music are also mentioned but with much less emphasis, as is physical education. The recommendation of four years of one foreign language rather than the usual two years, sometimes in two different languages, is one of his better recommendations in so far as it assures greater facility than is now typical. But even this recommendation is open to more questions than we are led to suspect from his presentation, as are most of his recommendations for the senior high school. I return to these questions in a moment.

## *The Educational Pattern*

First, a comment or two about other phases of education. The junior high school appears mainly in need of more

of the same things that it is usually doing already—reading, writing, computation, social studies, science, art and music, home economics, industrial arts, and physical education. But Conant also suggests that such subjects as algebra and foreign language be reintroduced in about the eighth grade as further preparation for senior high school and college. The need to modify the "child-centered" approach on the junior level with more of a "subject-centered" approach is thus a consequence that he considers desirable, a modification quite harmonious with essentialist predilections.[1]

What of Conant's views on the organization and control of education? Here, too, he is much more conservative than liberal. He condones the tradition of decentralization and local control with little more reason than that it is a "thoroughly sound" tradition that he hopes will remain unchanged. Indeed, the National Youth Administration of the 1930's was a dire "threat" that we must never repeat.

Even federal aid to education is not unequivocally endorsed. If anything, Conant has become more equivocal since *Education in a Divided World*, where some passages clearly support federal aid at least for the poorer states. But in *The Child, the Parent, and State*, published a decade later, he stresses more heavily the need for individual states to put "their own financial houses in order," leaving it to the reader finally to decide between state and federal aid.

As for administration of the public schools, he apparently accepts the traditional line-staff structure—at least by default. Certainly at no time does he raise any critical questions about it or about the power structure of education as a whole. In *The American High School Today*, he does state twice within five pages that the "successful" operation of a high school depends upon three requisites: first, a school board of "devoted" citizens; second, a "first-rate" superintendent; and third, a "good" principal—none of these three value adjectives ever being delineated. In neither passage, moreover, does it once occur to him even to hint that possibly "successful" operation depends also upon the active participation of parents and, above all, of the teaching faculty.

## *Where the World Crisis?*

I select four major defects in Conant's educational thought. In analyzing them, I propose to borrow freely from his several books on education, while concentrating with him on the secondary school.

The first defect embraces, directly or indirectly, each of the others. The Conant plan for the high school fails to provide for anything like the kind of curriculum now demanded by our "divided world." While recognizing in various writings the troubled nature of our period of civilization, the only formal provision for dealing with it systematically is in the senior year through a required course on "American problems." Note, however, that even here no mention is made of the relations of American to international problems, presumably because of dissatisfaction by many of his informants with present courses in world history. Note, too, that even here a choice is permitted, with the consequence that the alternative course in American government could easily be taught so as to avoid "problems" altogether.

[1] This article was completed before Dr. Conant's full report on the junior high school was available. (See *Recommendations for Education in the Junior High School Years.*) No major alterations in my evaluation of Dr. Conant's position are called for in the light of this report. As he himself states: "The recommendations in this report, like those of my first report, are purposely conservative . . ." although he also, of course wishes us to consider "new ideas."

Nor is Conant sure that social studies should be required for all four years. Three might be enough, two of them in history. Thus, assuming as generously as possible that the history courses are to be taught in such a way as to throw light upon the crucial issues of our day, the student receives his diploma with a maximum of three-sixteenths of his entire high school education directly devoted to these issues. In fact, the proportion will usually be one-sixteenth or even less, not only because history courses are rarely taught as a diagnostic or functional resource, but because American government is more safely and easily treated in a purely descriptive and expository fashion than in terms of the complex of controversies which, in fact, it generates.

But if one grants, as Conant himself at moments grants, that we live in a world where complacency is above all to be avoided—where, indeed, "foreign policy requires at least as much study" as "internal political and social history"—then the social studies should occupy a much more strategic place in the curriculum than he proposes. Problems of human existence, extending all the way from the personal to the planetary, should galvanize the treatment of all other subjects—not only history, but science and language as well.

For Conant to assert that "Formal study of . . . economics, political theory, psychology, sociology . . . must be reserved for college work and probably restricted to only certain types of colleges . . ." is thus to abrogate the first responsibility of secondary education. Granting that concentration and sophistication of study should markedly increase on the college level, why is formal treatment of these fields less appropriate in the high school than formal study of mathematics or science? I contend, on the contrary, that it is still more appropriate. Many young people will never again have opportunity, *under expert guidance,* to deal with matters that are of far more intrinsic and urgent concern to them than any others that they shall have to confront as they move rapidly up to the plane of citizenship and parenthood.

### *Compartmentalization*

A second defect stems from the first. Conant supports a curriculum structure that almost totally disregards recent psychological and sociological research as to the interrelated character of human experience. He thus ignores learning as a major dimension of such experience. Although a natural scientist, Conant does not seem to have perceived that the "field theory" now dominant in physics is increasingly recognized by advanced students of the behavioral sciences as comparably appropriate to the study of man.

The structure he endorses reflects, on the contrary, the highly atomistic and mechanistic premises of a Newtonian philosophy of science—a philosophy that continues to permeate psychology and other human sciences long after it would, were these sciences (or, rather, their conventional practitioners) to catch up with the natural sciences. In everyday language, Conant's curriculum, like that in the vast majority of high schools today, reminds one of an egg crate—a boxed-in series of cubicles divided from each other by artificial walls.

In one important respect, to be sure, his structure points in a modern direction. In his advocacy of the comprehensive high school, Conant opposes the divisive, constrictive proposals of Admiral Rickover and others of like persuasion. Interestingly, he refers to those who want to copy the class-layered European model of secondary education as "radical reformers," although they are the antithesis of radical in any precise sense. Never-

theless, despite his democratic stand on this paramount issue, his curriculum consists, as does that of the "radical reformers" themselves, of discrete bodies of subject matter with no detectable awareness of how or why these might be interfused so as to invigorate and strengthen one another.

In another respect, moreover, Conant moves back toward an even more atomistic curriculum than currently prevails. In order to provide room for the election of music, art, and practical courses, he proposes that the number of periods per day be increased from six to seven or eight, even though this means a still shorter daily period for each subject. The effect, of course, is to subdivide the learner's time into still more egg-crate cubicles. No hint of a suggestion is anywhere to be found that the number of periods per day ought to be *reduced* rather than increased—that the need is for larger rather than smaller blocks of learning through integrated, "field" approaches to the problems of human beings.

## *Rationale: Absent!*

A third cluster of difficulties emerges from Conant's required courses for all students. I have already questioned his provisions for the social studies. Aside from the fact that their importance is never compared with that of other general requirements, one may ask why no more reason is given for permitting algebra *or* general mathematics, biology *or* general physical science, than it is for American problems *or* American government.

Surely it is evident without argument that the educational consequences of algebra are not identical with those of general mathematics. Since the former is only a single division of the latter, the average student's facility in utilizing mathematics as a practical tool (and remember that this requirement is intended for *all* students enrolled in the comprehensive high school) is accordingly circumscribed. As a matter of fact, it is difficult to understand why Conant recommends algebra as an alternative at all. Since no reason is offered that might justify it on the senior high school level, much less on the junior high school level, shall we then assume as essentialists do that it is somehow good for the training of the mind because tradition says it is? The question of what kind of mathematics is most needed by the average citizen, or how mathematics may be effectively related to other studies in the high school, is entirely avoided.

The same puzzlement results from the common requirement in science. On what ground is biology ever to be preferred for the typical student to general physical science? If one purpose of general education is to provide everyone with broad scientific knowledge of the natural world, how can biology—however important it is as a division of the natural sciences—be regarded as of comparable value to the much more inclusive course? If it is not so regarded, then what is the rationale for permitting it as an equivalent at all?

As for the requirement of four years of English, Conant insists that about half the time should be devoted to English composition. Here again, a justification for such an allocation is never clearly stated. No one, of course, denies that ample practice in writing is desirable, but why is no allocation of time provided for ample practice in speaking? Nor does Conant ever inquire whether English can be effectively taught so long as composition, speaking, foreign language, or any other of the communication arts is divorced from the social studies, from the natural sciences, and from all remaining

areas of a thoroughly integrated high school education.

One may be concerned, finally, not merely for what Conant includes in his general requirements but equally for what he does not include. Art and music, for example, are "urged" as electives, but nowhere in *The American High School Today* does he require even one general course embracing the major literary, graphic, musical, and other arts.

To be sure, in his 1949 volume he devotes a whole chapter to the humanities in general education; their minimization ten years later is therefore all the more conspicuous. Yet even in that earlier volume, Conant's conception is restricted largely to a study of the classical past. Indeed, unless in the most tangential fashion, no consideration is given anywhere in his writings to the cultural role that the arts inevitably play in the crisis of our age—a role that relates them by infinite strands to comparable roles of both the physical sciences and the sciences of man.

The possibility, moreover, that religions may be studied in public general education, not in a sectarian sense but as great cultural institutions deserving of the same respectful but critical attention as all other institutions, is never weighed as a corrective to the currently artificial if not evasive policies on this matter that Conant himself seems to endorse. Equally, the possibility that philosophy has a place in the humanities of the modern secondary school is dismissed along with economics and related formal studies. Actually, ethics has already been demonstrated by a few experimental institutions to provide fruitful experiences in learning by adolescents. Logic, too, if vitally taught as the prime instrument of critical thinking, could well prove itself to be far more rewarding in junior or senior general education than any course in algebra.

## *Conant on the Talented*

Finally, Conant is deeply concerned with the academically talented minority —so much so that one wonders at times whether it is not his *chief* concern. At any rate, his insistence that most high schools fail to lift this minority to the levels of achievement of which it is capable is undoubtedly correct.

When, however, we recall his program to effect such an objective, we ought to be skeptical indeed. Why, for example, does Conant assume that four years of mathematics and four years of a foreign language are the primary measures of academic talent? (We recall that he also proposes three years of science for this group.) If it is because standardized tests of ability are geared to these two fields, then one may ask whether it is not the standardized tests—themselves largely based upon mechanistic psychologies of learning—that should first be questioned. Yet, Conant is unequivocal in his delimitation: "If the counselor becomes convinced that a student is having difficulty with one or the other subject (mathematics or foreign language), he should then decide the student in question is not academically talented."

This is an incredible statement. Are we then to infer that there is no such thing as academic talent in the arts—in music, painting, sculpture, the dance, drama, or literature? Is there no such thing as academic talent in the human sciences—in economics, political science, psychology, sociology, history? Conant cannot, of course, deny that there is, and it is true that the sharply bounded provisions for these areas in his conventional curriculum do not encourage the discovery of whatever such talents are potential in them. The fault here lies not in the promise inherent in able young people, but in the recommended cur-

riculum—a vicious circle of constriction upon the great range of talents needed by the world of this and the next generation. Yet Conant actually suggests that it is only from the academically talented *as he defines them* that "will come the future professional men and women."

To provide strong sequences in the three fields of mathematics, science, and foreign language is, of course, legitimate. Certainly we need more scientists and engineers, and Conant's extended discussion of our competition with Russia leads one to suspect that his principal motivation here reflects the strong pressures upon American education to engage more vigorously in that competition. My own view, however, is that, even on this premise, equally strong sequences should be provided in both the arts and the sciences of man—that the strength of American democracy depends in the long run at least equally upon them. All sequences, moreover, should be integrated with the main stream of an organic program of general education. To study nuclear physics, for example, with no explicit regard for its dangers and promises to the future of mankind is to encourage the sort of social irresponsibility against which many nuclear physicists have themselves, since Hiroshima, bitterly rebelled. Students as well as teachers of this subject have an obligation not only to themselves but to those of their fellows who do not study it—an obligation that requires constant opportunity for give and take in learning among students and teachers from many subjects.

Additional doubts remain. By virtually compelling the academically talented minority into elective sequences of mathematics, science, and foreign language beginning in the freshman year, students fourteen and fifteen years of age are likely to be guided prematurely toward the kind of career for which these subjects, especially the first two, are directly beneficial. Whether further guidance and further maturation on the part of the students might develop talents, interests, and values in quite different directions is, therefore, much more difficult to determine than if the range of electives were wider and more flexible.

This is not to say that some talented students, even at fourteen, may not be ready and eager to begin intensive study in one or more of Conant's three main elective subjects. Even for some of these, however, it is not at all self-evident that the foreign language sequence is to be compared in worth with the other two. A student clearly bound for a field like engineering may benefit greatly by the mathematics-science sequence without necessarily benefiting in any comparable way from four years' study of a foreign tongue. On the other hand, a student whose gifts unmistakably point in the direction of comparative literature, let us say, may gain tremendously from foreign language study but only in meager ways from the heavy mathematics-science sequence.

Conant, to be sure, makes much of the importance of facility in foreign languages for an age of increasing intercourse among world cultures. I do not deny, other things being equal, that such facility is advantageous. The first question that confronts us, however, in remaking the curriculum is: *What is most important?* The answer to this question requires us to balance competing values and thus competing demands for their fulfillment. To satisfy some educational demands in any adequate way, others cannot equally be satisfied. And in the perspective of our age, we have every reason to wonder whether the vast total of curriculum time (at least twenty per cent) earmarked by Conant for foreign language study could not, for many of

the ablest minority, be devoted much more rewardingly to other matters—for example, the explosive problem of the survival of the human race itself.

In further support of this demur, we should not overlook the remarkable innovations now well under way in the technology of language learning. Thus, if an individual arrives at a point in his career when Russian, Spanish, Chinese, or any one of many other languages has become important to him (Is he likely to know at the age of fourteen which of these it will be?), we now find that he can, given fair intelligence and competent instruction with new tools of communication such as tape recording, acquire facility very much faster than by any program of abbreviated periods spread across four years.

### *Some Positive Points*

Any full consideration of Conant's views would carry us a good deal further. They include a number of commendable features that I may only mention.

Perhaps the most noteworthy is his proposal to abolish high schools with less than one hundred students in the graduating class by combining them into larger ones, his purpose being, of course, to improve quality. The trend in American life toward integration and interdependence is supported here, though at the cost of some strain to an equally vehement belief in decentralization and local control. Again, in his *Education and Liberty* (1953), he took a forthright stand in opposition both to the increase of private secondary schools and to any public funds for their support. Even earlier, while still President of Harvard, his support of academic freedom was more outspoken than that of some liberals—a phenomenon not uncommon among essentialist educators devoted to the traditions of American democracy.

More specifically, Conant offers a variety of suggestions that support modern trends. He wants to see more counselors in the junior and senior high schools. He urges summer programs both for deficient and able students (though he rejects the idea now growing on the educational frontier that the whole conventional schedule should be overhauled to include all students in a year-round plan). He would provide many more terminal junior or community colleges of two years' duration (though he never considers whether or not a more defensible arrangement for the future might be four-year junior colleges, beginning with the present high-school junior year). He favors homerooms in which students remain together for three or four years "to develop a sense of community interest and to have practice in a small way in representative government" by electing representatives to the student council (though no attention is given to opportunities for teacher-pupil planning of the curriculum itself).

### *Vocational Education*

Particular comment is called for as to the proposed vocational curriculum. Conant's opposition on democratic grounds to district vocational schools is so admirably emphatic that he wishes to provide industrial and other training even in suburban high schools. Nevertheless, that his image of the vocational program is highly conservative may be inferred from statements such as this: "When opportunities for employment in a given trade no longer exist within the community, the training program in that field should be dropped." How can we interpret such a recommendation if not as concession to the local economic status quo? Its effect is to discourage students from considering vocations farther afield that might be

more congenial to their interests and hopes. Likewise, it fails to take into account the fluidity and mobility of occupational opportunities in the nation as a whole.

Moreover, as is true of the rest of his curriculum, Conant never asks how the vocational program may be continually and functionally related to more academic studies, the role of trade unions in American democracy being a case in point. His provision for "work experience" by which vocational training is tied to community practice could provide some of this relationship; but the miseducative consequences of work experience when guided, as it often is, by instructors insensitive to and uninformed about the cultural milieu of economic life are never assessed.

## *Essentialism Redivivus*

We return in conclusion to the judgment that, granting many qualifications, Conant expresses the essentialist orientation toward education. Indeed, despite his doubts about the value of philosophic approaches to education, he occasionally recognizes their importance in terms that cause one to wonder just what his attitude toward them really is. Not only does he plead with the citizen "to reexamine his own presuppositions"; quite often he unmistakably reveals his own most pervasive ones.

His economic presuppositions are a good example. The school, of course, should "promote the social and political ideals necessary for the harmonious operation of an economic system based on private ownership and the profit motive. . . ." "Granted private ownership and the profit motive (which have been sneered at in certain circles, but for which I believe there is no substitute for this nation), the question (is) how best to keep our society truly competitive and moving toward a greater degree of equality of opportunity. . . ."

Again, he implies agreement with the essentialist-tempered ontological belief of "all but a very small number of honest and intelligent citizens" that "the universe is somehow so constructed that a sane individual's acts are subject to moral judgments under all circumstances and under all conditions."

Frequently he offers assertions that are rhetorically pleasant to read but lack, as essentialist pronouncements often lack, any kind of clear cultural context. Here is a sample: "A climate of opinion must be created which brings forth in each young person a strong desire to do his or her best in school. Then the schools must, in turn, provide the challenging courses and provide a variety so that not only the academically talented student but every student will feel his studies are worthwhile."

Conant's advocacy of "ability grouping" (for some elusive reason he would not require it for the senior American problems course) exemplifies just this lack of cultural context. For, while he concedes that this device is "a highly controversial subject," and while he chooses to side without explanation against those "competent teachers who argued vigorously for heterogeneous grouping in all classes," at no time does he answer one of the most pervasive and probably the most serious of all objections to homogeneous grouping. This objection has nothing to do with the learning of subject matter; rather, it has to do with the concomitant learning of attitudes—of feelings of superiority and inferiority, of group divisiveness, which it is a major purpose of the comprehensive high school to prevent.

The author of *The American High School Today* declares that he is not

offering a "blueprint of an ideal high school" because conditions and needs vary too much from area to area. This recognition of our pluralistic heritage parallels his intense opposition to any kind of federally unified design for education in favor of the tradition of localized control. At the same time it should be pointed out that, despite the admitted selectivity of the schools he visited, the practical effect is not only to approve of a very definite curriculum plan but to endorse it for the vast majority of American communities. This plan, he repeatedly reminds us, departs in no important ways from the most "adequate" high schools already in existence. The over-all if not always exact correlation between what was already advocated in *Education in a Divided World* and what later was most enthusiastically condoned in Conant's observations of actual schools therefore leads one to infer that, in the tradition of a conservative ethics extending at least from Edmund Burke to F. A. Hayek, he is by no means adverse to the belief that "what is" is also likely to be "right."

Let me end, however, on a positive note. Dr. Conant does not wish us to believe that he is "in favor of freezing the development of the curriculum or the organization of a high school." On the contrary, he does urge investigators to "ask all sorts of questions about human relations among students and their families. . . ." He does urge experimentation. He does see great need for more research by the behavioral sciences in education. I plead with him, therefore, to follow through, to lend his great prestige and earnestness to the task of thorough rebuilding that now lies ahead.

# For the Record

## To market, to market, to buy an A.B.

ONE OF THE most stringent questions associated with contemporary higher education is the blunt one of how to pay for it. For better or for worse, a college degree has become a more widely coveted symbol than ever before, and the fact of extraordinarily increased enrollments is both very much with us and blooming, just around the temporal corner, into figures that are downright startling. At the same time, institutional expenses, capital and operating, are decidedly on the rise. As the necessity of college training, or the desire for it, becomes more broadcast through the strata and segments of our society, how are its increasing costs to be met?

One inventive attack on this problem has been planned by Governor Foster Furcolo of Massachusetts. His basic idea, first presented to the Conference of Governors last summer, is that of reducing current costs through insured deferred payments. For example, when an eligible student is accepted by a college, he and his parents or guardian sign a contract with a nonprofit foundation. The foundation pays the college the student's annual fees, including tuition, books, room and board, and all standard and proper charges; in return, the student and his parents pay the foundation an annual sum for 20 years, the actual amount approximating one-third of the fees paid for the student to his college for one year of higher education.

One way of managing this arrangement is for the foundation to purchase a 20-payment insurance policy, with itself as beneficiary, in the student's name. Because of large numbers of policy holders, rates are likely to be low, and the annual payment by the student or his family will cover the premiums, contribute to a reserve for lapsed policies and contingencies, and pay 5 per cent interest on the amount advanced on the student's educational behalf. At the end of 20 years, the foundation receives the cash surrender value of the policy, including any accumulated dividends, to retire the loan or repay the principal involved. Similar applications of the basic plan entail an annual amortization of the principal, following familiar mortgage principles and procedures, at 4½ per cent interest, or gearing college costs to a 20-payment life insurance policy with all interest

charges deferred to the twentieth year.

In addition to its flexibility, Governor Furcolo's conception has other attractive features. By reducing annual costs to between $350.00 and $875.00, it permits a student to pay from the outset for his own education. Even better, he can do it largely through summer employment, supplemented perhaps by no more than modest work during the academic year. There is less need to skimp on study or to stay apart from those potentially value-generating aspects of college life that often are unfortunately lost for economic reasons. Further, although a large and long-term indebtedness is incurred, its terms are both more favorable and more regularized than those available from more usual loan sources. Finally, the plan, while in no sense favoring either state or private colleges, protects private institutions from the risk of being almost priced out of their utility by mushrooming costs and the competition of their publicly supported counterparts.

Obviously, anything that lessens the likelihood of such a state of affairs is highly desirable. If mounting expense forces increased tuitions in private colleges and universities, it will mean an economic restriction on the range of students they can serve as well as a numerical one. To have their contribution diluted in this essentially irrelevant fashion at the very time that higher education is reaching a more diversified as well as a larger portion of our population would be an affront to some of our fundamental values. One of the strengths of Governor Furcolo's plan is its tendency to inhibit this restrictive effect of expanding costs on privately financed institutions.

Another approach is that suggested by Dr. Russell W. Wiley, Assistant Superintendent of Florida's Sarasota County schools. Called a "home-style scholarship corporation," this arrangement puts the responsibility on the local community and benefits the talented but economically needful youngster.

The Sarasota plan allows interested individuals and groups to buy shares, priced at $25.00 per year, in a local corporation. The funds are then allotted to promising students on the basis of their first-year college needs. The students are expected to provide as much money themselves as they can, to forego the ownership or maintenance of a car and the pledging of a fraternity or sorority, to work in the summer, and to achieve at a level consonant with their ability. These terms are spelled out in a corporation-student contract, which also provides for student progress reports to the corporation's Board of Directors, which may be circulated to all shareholders. The identification of the able high school youngsters to enjoy this kind of help is the business of the Board of Directors and a committee of school counselors and administrators.

Ingenious and attractive as it is in many ways, the Sarasota plan seems too easily subject to abuses and too closely associated with something akin to the indignities of a pauper's oath to represent a satisfactory long-range answer. Also, although the reasons for doing so are fully understandable, it restricts the student's degree of engagement with his college experience. As it stands, it is essentially a stop-gap measure.

Governor Furcolo's plan may be the realistic basis for hope among not only many thousands of college-aspiring students and their families, but also among hundreds of secondary schools now unable to encourage high but economically unsupported ability, and among scores of private colleges faced with no choice but the raising of tuition to meet climbing costs.—EJS

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# *Motion, action, words*

THOUGH ALL OVER the world the missiles are poised, ready to go off at a signal from headquarters, everything is so regular, all about us, the situation simply cannot strike our imagination. How could anything really serious go wrong? The human race is now like a child playing with a live hand grenade. It might play with that lethal toy quite contentedly, and without any damage whatsoever—or, then again, it might happen to pull the pin that would cause the grenade to explode.

Are we not like the citizens of Pompeii, who, just before Vesuvius let loose, were wholly involved in their daily bickerings and scandals, in a way of life quite alien to the conditions they found themselves confronting but a few moments later?

Here, somewhat anti-climactically, is how, in my opinion, mankind's present "global" problems should be approached. I admit, it's a leisurely approach. And if others can move at a faster pace, that's all to the good. My purpose is to state, in my judgment, how the modern situation lines up, and what kind of attitudes I think we should take towards it. But even if a great many people agreed with my views, I could not stir up in myself strong hopes that they will prevail. Without sufficient understanding, without sufficient imagination, I tend to fear that the problem may prove too great for man to solve, even though it is largely of his own making, the product of his own great understanding and imagination.

Adapted from an address given at Bennington College in April, 1959.

## *The Three Modes*

The situation, as I see it, lines up thus: There are the physical sciences, the sciences of motion; there are the social sciences, the sciences of action; and there are the humanities, specializing in words, or more generally, symbols.

The sciences of motion are unquestionably the ones that have made the greatest advances in recent decades, advances so great that, for the first time in the history of this planet, there is the real possibility of the human race's being able to destroy itself totally, and almost by accident, all as a result of "progress" in the physical sciences.

The major problem here is this: There is no essential difference between our swords and our plowshares, no essential difference between the peaceful and the warlike use of the resources of science. The resources of industry are equally usable for peace or for war. To talk of outlawing them for warlike purposes would be like trying to outlaw the fist while developing the resources of the hand.

There is a strong tendency to overlook the implications of this ambiguity

whereby industrial equipment is potentially a weapon. We tend to think of new physical powers as promising new "solutions." But powers are not simply solutions. Every new power is something to fight with—and, still more poignantly, every new power is something to fight *about*.

Such considerations bring us to our second discipline—the social sciences, the sciences of action. In proportion as the physical sciences, the sciences of motion, build up new powers, then the social sciences, the sciences of action, must seek to develop corresponding controls, guides for the policies of legislators and statesmen. Here we confront a remarkable paradox: One thinks of social scientists as being, in general, liberal in their views on social relations. They aim at human betterment and plead for human freedom. Yet, to the best of their ability, they are working on projects to perfect scientific means of prediction and control. To the best of their ability, they are searching for better ways of lining us up, of getting us to behave as some authoritative body or other might decide we should behave. Insofar as they succeed, they provide the means for the systematic bureaucratic management of the human anthill; in brief, they complete the job of "regimentation." But insofar as they fail to develop such controls, then the new physical powers, so drastically deadly in their potentialities, remain *out of control*.

But what of the third area, the humanities, the area of words, or of symbol-systems in general? One big mistake tends to plague many persons identified with the humanities—the tendency to look upon the new mechanisms as "inhuman." Actually, there is nothing more peculiarly human than technology. At every step of the way, it is the result of human invention, human genius, and human imagination and skill. Though it has effects that are often referred to as "dehumanizing," technology has its origins in sheerly human prowess and sheerly human aims. The machine is so thoroughly human that it is even the *caricature* of a human being. It has the efficiency of political cartoons, which over-emphasize some traits of their subjects while under-emphasizing others. And if, by greatly provoking the need for departmentalization, specialization, it seems in one regard to break people into fragments of themselves, by the same token all such specialization attains its dialectical completion in a quite different kind of specialization: the paradoxical specialization in over-all relationships, as with statesmen, diplomats, public relations counsels, advertising men, promoters, editors, columnists, writers for the mass media, etc.

## *Basic Confrontations*

And now we get to the crux of the matter: Our specialists in over-all relations tend to present our socio-political and cultural problems in terms of the so-called "cold war," a battle between "East" and "West," between communism and capitalism, between totalitarianism and freedom. But, in view of our tripartite alignment, is that really the way the issues may most accurately be confronted? Let me propose a different line of thought.

Insofar as all three disciplines (of physical motion, social action, and symbol systems) are all *guided* by the nature of terminology, might they not all, to this extent, be similarly *goaded?* My notion of a terminological goad concerns the *implicative* nature of terminology. Terms have implications; they suggest other terms, and other things named by those terms. In sum, they suggest all sorts of further possibilities, a logic of future development beyond the present situation.

In the broadest sense, such a profusion and development of implications is to be

seen in religious and political doctrines that hold out various kinds of promises to those who accept the logic of their implications and enroll in their name. But this process works in many ways less obvious, though equally provocative.

If a writer happens to imagine a likely character in a likely situation, this much of a theme can suggest many other developments in keeping with it. He may gradually work up a whole set of characters, all variously designed to throw light upon the character with which he started or to help develop the original situation into a plot. Thus, to get such a germ for a story is to become excited by a sense of futurity centering in more or less clearly developed ideas about the *possibilities* which the project implies. And the further our writer goes in developing his theme, the more compulsive his attachment to it is likely to become. He "must" finish his book; he "must" carry these possibilities to their perfection.

Such a responsiveness to implications seems to be at the bottom of all our human enterprises, based as they are on our nature as word-using, symbol-using animals. We are inherently endowed with terminologies that imply many sorts of potentialities and thus *goad* us to plan for their actualization.

What, then, are the main implications in this particular theory of implications? Our technological vocabularies today imply the possibilities of many new powers. Under the circumstances, it would be almost unthinkable that men who perceive these implications will abandon efforts to follow them through, even to the end of the line, even to the jumping-off place, if necessary. There is no essential difference between the tracking down of implications in the writing of a novel and the tracking down of implications in the perfecting of a device that might obliterate all mankind. It just so happens that one set of implications can do more damage than the other.

But can it? The humanities crowd, among which I properly enroll myself, is open to a charge of envy. You have heard many of them complain about the "arrant materialism" engendered by the gadgets of technology. At such times they lay themselves open to the charge that, by such technological tests, the humanities don't rate very high. And it is true that the physical sciences have developed new powers that make the humanities, by comparison, look ludicrously ineffective. It is also true that the social sciences may produce the techniques of social control by which political authority may be able to prevent our using the new powers suicidally. But, if the world is crazy enough to want to use the new powers thus self-destructively, that's a matter for the humanities. The proponents of the humanities are the ones who, by either commission or omission, can make such idiotic conduct look reasonable.

### *World Order a Controversy*

In short, we necessarily confront the problems of a new world order, based on technology. And the implications of technology are by no means confined to simple and beneficent promises. Insofar as technology perfects new powers, it sets up new burning issues, new topics for world-wide controversy. Yes, if I may take over a recently hallowed word, technology is essentially "controversial." It is the carrying out of implications to which human terminologies have made us responsive if not responsible. It is our human equivalent of a Niagara Falls. And, obviously, one never proposes simply to "refute" a Niagara Falls. One takes it for granted, and one acts accordingly.

Thus, if we take technology as our basic situation, we must build our lives,

and the values that guide our lives, around the implications of technology. These implications are all about us, with their mixture of promises and threats. Technology, we quickly see, is developing new powers of a nature whereby the resources usable for peace cannot be clearly demarcated from those usable for war. Yet many countries in the world today, ours above all, could not continue to exist in ways that now seem "natural" to us except by an exactingly high development of technology.

Technology, therefore, presents us, above all, with the problems of World Empire. And such problems have to be settled somehow, if the world is to exist in ways that make existence worth the effort. But the terrifying consideration is that accidents of controversy, local to this particular moment in history, tempt us to believe that the heart of the issue beats elsewhere. We are encouraged, and we encourage ourselves, to believe that the important battle is between two Isms. Everything becomes Us-ism against Them-ism. We try to persuade ourselves that the thinking of these two factions is as antithetical as the antipodes—but I wonder if it is.

And that brings us to the last distinction necessary for this discussion. We used to hear talk of the difference between Little Business and Big Business. I am proposing that, if only as an experiment, we substitute a distinction between Little Technology and Big Technology. Speculating along this line, we might pause to ask ourselves whether any great difference was observable in the ways in which the atomic bomb seems to have been developed in the U.S.A. and the U.S.S.R. Big Technology has its own peculiar logic, and maybe Isms left over from previous eras obscure our understanding of its particular conditions.

I do not mean to imply that there are not real issues here, real grounds of conflict. Everywhere one turns, the new powers are establishing new grounds of conflict. I am merely asking that we confront them in terms wholly relevant to the present state of technological development, and not in terms of some dramatic conflicts that that highly dramatistic thinker, Karl Marx, set up more than a century ago, for dealing with controversies germane to the state of technology in his times.

The powers of the new technology are so great, the risk of their running amok is so close at hand, that the whole world should aim, first of all, to *cooperate* in the attempt to harness these touchy forces. In fact, even if all nations were using their best resources, purely in the effort to cooperate towards these ends, I still don't by any means feel sure that mankind would prove itself equal to these fantastic products of its own genius. The prospects seem all the more forbidding when we see the problem being approached in terms of inaccurate Isms that are anachronisms.

True, the present controversies are real enough. If certain nations get control over the remaining natural resources of the world, the exploiting of these resources may be strategically denied to certain other nations. But in disputes of this sort, there is really no difference of opinion. Both sides want the same things. And they agree so thoroughly that each would be happy to exclude the other if possible.

### *The Fated World Order*

What, then, are we confronting? Is there some one over-riding situation around which our educational policies should be developed? I take it that a kind of technological world empire is in the process of trying to be born. Though technology is forcing all the areas of the

world more closely into contact with one another, it does not seem inevitable, or even desirable, that such an empire be "monolithic," controlled from one authoritative center. A loosely federated organization, a body largely deliberative along the lines of the U. N., though perhaps with more ability eventually to enforce its collective will, would seem to be the sort of political institution the world is moving towards.

The technology, the means of production and distribution driving towards such world empire, should not be considered intrinsically as either good or bad. But it should be considered as fated. It is fated in the sense that it is pointing in the very direction of development which human nature makes seem reasonable. It is the entelechy of human society, the completion, the fulfillment, of a specifically and characteristically human destiny.

It involves the development of man's peculiar genius as symbol-using and tool-using animal to the point where many of his most characteristic tendencies become the caricature of themselves. Thus, his most ingenious methods of self-protection reveal themselves as threatening self-destruction. The instruments which he has invented that they might serve him require his total devotion in their service. Each new method of preservation or cure is one new potential method of doing damage if its aid is withheld or if its powers are used in reverse just as psychological knowledge can be used either to heal sick souls or to make sane men crazy.

Technology, far from being "inhuman," is the very burlesque of a human being working and thinking. The new computers are wholly the results of human wizardry. All they can do is what man arranges for them to do, in accordance with modes of guidance supplied by that most characteristic of all human traits, *vocabulary*. Technology is fated because it is ingrained in the nature of man's terminologies, which imply the possibility and thus the psychic necessity of still greater strides in this same direction.

Before technology was developed, the course of human rationality was straining in this direction, guided towards it as towards a beacon. But now that so many of its ideal possibilities have been embodied in material instruments, the *promises* that originally infused such rationality have become transformed into *problems*. Now that the god has been brought down to earth and given an earthly body, each element of hope, of guidance, has become one more new power, one more new property for men to wrangle over.

Such a paradoxical reversal necessarily produces dislocations in the arts particularly, those dials of self-expression which, being exceptionally mobile, are as quick as the muscles of an actor's face to express notable shifts of attitude. Such recording on the dials of culture shows up in such manifestations as triviality in the "smart" magazines, an art of sparse content, or in the deliberate cult of the irrational (the artist's way of questioning the presuppositions which we otherwise take for granted). Ironically, the most "wholesome" expression is likely to be found in the stupidest and crudest of contemporary work, work by those who are too insensitive or unprincipled to be interested in anything but selling to a market patronized by people whose modes of self-protection are of a sort most dangerous of all to the human race in the long run—protection by sheer bluntness, by a mere thickness of the intellectual hide.

Perhaps, to round out this notion of technology as fated, we can profitably recall the classical concept of tragedy as the result of a fatal flaw or error which

the Greek playrights called *hubris*, and which we call pride. It is the business of the humanities to keep us reminded of the tragic pattern (and the comic one, too, for that matter) of dramatic irony: Our security becomes our danger; our boast becomes our destruction; our self-satisfaction becomes our stupidity. Our pride goes before our fall. Thus, if we look upon technology as a cause of boastfulness, if we begin congratulating ourselves on our ability to "conquer" nature, if we bask in our own admiration at the thought that we need not give a damn how we rip nature and tear it and plunder it and rape it for our petty ambitions, then I think that the humanities have sound and properly pious admonishments to offer here, if they will but remember their best traditions.

And there the case rests. Primarily, I have gravitated towards lament and admonition. But these are the days when the Power of Positive Thinking is almost hysterically insisted upon. We yearn for promises, feeling that those candidates for whom we vote must out-promise one another. But the best that I can offer is the pale notion that if the world does get beyond Us-ism and Them-ism and really begins to confront its global destiny in a spirit of genuine international cooperation, things may not be so exacting or so menacing as they seem now.

In sum, so far as problems of education are concerned, there are the physical sciences (of motion), with their drastic new powers; and the social sciences (of action), with their attempts to work out corresponding controls, though such controls can succeed only insofar as they build up organizational devices that greatly abridge our freedom. Third, there are the humanities, the area of symbol-systems as such, by nature latitudinarian, and somewhat capable of imagining perspectives that transcend local interests and prejudices.

In all three areas, men will be kept busy, with the avidity of a "compulsion neurosis," tracking down the implications of their terminologies. These implications add up to a fated movement towards a technologically goaded World Empire that is to be envisioned somewhat ironically as mankind's burdensome "fulfillment." Ideally, education, under the inspiration of the humanities, would aim to make men at home with such an outlook.

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# Change and ferment in Asia

Barnett, A. Doak. *Communist China and Asia: Challenge to American Policy*. New York: Harper & Brothers, 1960. Pp. xi, 575. $6.95.

Matsumoto, Yoshiharu Scott. Contemporary Japan: The individual and the group. *Transactions of the American Philosophical Society*. Philadelphia: American Philosophical Society, 1960, New Series, Vol. 50, Part 1. Pp. 75. $2.00.

Ohm, Thomas. *Asia Looks at Western Christianity*. Freiburg: Herder and Herder, 1959. Pp. xvii, 252. $4.75.

Sitwell, Sacheverell. *The Bridge of the Brocade Sash*. New York: World Publishing, 1960. Pp. 314. $8.50.

Wertheim, W. F. *Indonesian Society in Transition*. The Hague and Bandung: W. van Hoeve, 1959. Pp. xiv + 394. $6.00.

For almost as long as they have known each other, the West has applied the epithets "mysterious" and "unchanging" to the East. No doubt coined by casual observers from the West and exploited for their romantic appeal by the travel agency and the shipping line, these epithets were essentially inaccurate, and their widespread currency merely reflected the West's abysmal ignorance of the East. Needless to say, no society is inherently mysterious and beyond comprehension, and what is more obvious, no society ever stands still. Furthermore, no single adjective can adequately describe so vast and varied a region as Asia. If Asia still has primitive tribes whose way of life seems unchanging, it also has modern industrial states such as Japan, which has changed more rapidly in the last one hundred years than many a modern nation, east or west. Nevertheless, it has become well-nigh a habit with the West to think of Asian societies as unchanging or, at least, resistant to change.

But while Asia has actually always been changing, there is a sharp distinction between the Asia of the pre-World War II era and that of the post-war era. The former was definitely a slowly changing Asia. Its many isolated and scattered societies, untouched even now by the industrial revolution, were generally passive in their outlook and strongly disposed toward age-old customs and traditions. In such societies, change was apt to be slow, especially when compared with the West.

World War II seems definitely to have done something to Asia's alleged aversion to change. It has set in motion social and political forces which are revolutionizing the Orient and which have made the once popular notion of an unchanging East a complete anachronism. Consider, for example, the single fact that until the end of the war Asia was dominated by Western colonial powers. In all the vast realms of the Far East, Southeast Asia, and South Asia, there had been only two truly sovereign states, Japan and Thailand. China, for all her greatness culturally, was most certainly not a sovereign

state. Japan occupied her entire coastal region, including her most important cities and industrial centers. Moreover, in unoccupied Free China, there was only hostility and suspicion between the Nationalists and the Communists behind a phony united front.

All this has changed, and with dramatic suddenness, since shortly after Japan surrendered in 1945. In 1946, the United States freed the Philippines. The British, upon whose empire, it used to be said, the "sun never sets," began a retreat from her Asian possessions with the granting of independence to India in 1947. By 1949, the Dutch had withdrawn from Indonesia, except for West New Guinea. The French also, through the Geneva Convention of 1954, promised to withdraw from Indo-China. Thus, within a few years of the end of the war, virtually every country in Asia—from Pakistan in the southwest to the Republic of Korea in the northeast—has become a sovereign, independent state. Today, only traces of Western colonialism remain in Asia.

There has also been a spectacular reversal in the international status of two countries as a result of the war: Japan was reduced to a second-rate power, and Communist China has emerged as the single most powerful political force in Asia. This latter fact alone should convince any doubting Westerner about Asia's potential and capacity to change.

It is this Asia, the Asia of restless, revolutionary change, which is the concern of the several books presently under review. At first glance, these books appear to have little in common. One is a travelogue—light, subjective, and somewhat sentimental. Another is a serious, objective sociological study, complete with appropriate footnotes and statistical tables. Still another concerns itself with an underdeveloped area, while two of the five look into the most advanced industrial nation in Asia. Finally, Christianity is the subject of one and Communism of another. Yet, beneath the disparity is the common aim of the authors to describe a corner of Asia, or a more general cultural or political force in Asia, against the background of the revolutionary political changes which have followed in the wake of World War II. There is, therefore, a greater homogeneity among these studies than first meets the eye. Moreover, they are all addressed to the Westerner, and all imply, if they do not say so directly, that there will be grave consequences for the East and eventually for the entire world if the West persists in not knowing Asia.

In this regard the author who writes with the greatest urgency is A. Doak Barnett. To him the rise of Communist China is not only a threat to Asia but also a "challenge to American policy." He devotes half his study to the techniques of the totalitarian state as applied internally, and the other half to the varied policies of attraction, pressure, and subversion as applied externally to millions of Asians. The two halves dovetail into a single unit, showing convincingly that what has happened in China in a decade can easily happen elsewhere in Asia in a comparable period of time. In Asia today the circumstances are somewhat similar to those of China in 1949, when the Communists seized power. The Chinese people then were tired of war and civil strife and were psychologically disposed to accept any leader who could end the chaos and establish stability. Not a few Asians today are also showing signs of weariness and impatience with their young, inexperienced governments. Moreover, like the Chinese people of 1949, Asians today have little or no experience in self-government and are in no position to judge the merits of Communist ideology. Although Barnett is not an alarmist—he

writes soberly and unemotionally on a subject which is becoming increasingly difficult these days to treat with detachment and equanimity—he is frightening in his contemplation of what might happen in Asia if the Chinese Communists pursue their present course and if the West remains ignorant of and indifferent to the changes now going on in China. One cannot argue with Barnett's contention that an understanding of these profound changes is the first requirement for successfully meeting the Communist challenge.

If the West knows little of Communist China, it knows even less of Indonesia. Its geography alone is staggering, for it consists of numerous islands, large and small, extending over an ocean area greater than the land area of the United States. Such a geography makes for extreme cultural diversity. There are many distinct peoples and tribes. There are three different kinds of civilizations: the harbor principalities of Sumatra and Borneo; the hinterland in Sumatra and Borneo; and the irrigated areas of Central and East Java. There are also sharp religious differences.

It is, however, the thesis of W. F. Wertheim, a professor of modern history and sociology at the University of Amsterdam, that the cultural diversity is more apparent than real and that there is an unmistakable unity beneath it all. He points out, for example, that despite the many tribes in Indonesia, the Malayan element is strongly dominant, and that from a linguistic point of view, all Indonesian languages, except a few of minor importance, belong to the same family. In general, Indonesians are governed by a common customary law, and the vast majority of the people are of Islamic persuasion. Thus, in practice, the divergence of social patterns gives way to a basic cultural unity. To Wertheim the best single proof of this "unity in diversity"—which, incidentally, is the official motto of the Indonesian government—is the existence of a strong Indonesian nationalism made up of diverse nationalist sentiments. That the Indonesians had a single colonial ruler in the Dutch may have contributed to producing a single, unified nationalist force; but, whatever the reason, the fact remains that when the chips were down, the underlying force of national unity prevailed over the forces of disunity.

In the light of the West's conception of an unchanging East, it is significant that one of Wertheim's purposes is to demonstrate the way dynamic forces in Indonesia have expressed themselves in various if often veiled forms throughout its history. For this reason, the author takes the historical approach, believing firmly in the view that contemporary Indonesian society can best be understood by a serious study of its past.

Like Wertheim, Yoshiharu Scott Matsumoto, of the Atomic Bomb Commission at Hiroshima and Nagasaki, is a sociologist, but his study of contemporary Japan is more narrowly and technically conceived. Relying in the main on polls which posed to cross-sections of Japanese society such questions as "Should a married woman obey her husband's family?" "Do you think it better for the eldest son to become the successor of the house as in the past?" and "Do you approve or oppose birth control?" he puts to a test the thesis that the increasing importance of the individual over the group is a correlate of the growth of modern industrial-urban phenomena. He finds, after many such polls, that while Japan's economy is highly industrialized and her society urbanized, there has not been a corresponding increase in the importance of the individual over the group. Here is proof, if one believes in the methodology

of the sociologist, that in some areas of Japanese society, particularly in the family, occupational groups, community life, and politics, tradition still has a tenacious hold on the people.

Perhaps this is the sort of assurance that Sacheverell Sitwell sought when he made his first trip to Japan. A member of a distinguished English literary family, he, like the more serious authors above, is also concerned with the problem of change. But his concern is that perhaps Japan is changing too rapidly for her own good, and that much that is admirable in her traditions, especially in the arts and crafts, may be lost in the process. But after his visit, he convinces us that Japan, in spite of vicissitudes which might have changed it completely, has remained essentially the same as it has been for centuries so far as her art, gardens, temples, shrines, and the natural beauty of the land are concerned. While he seems at times to be overly enthusiastic about the Japanese propensity for beauty—for he was a professed lover of Japanese art and esthetics before he ever visited Japan—his descriptions of Japanese painting, porcelain, traditional music, gardens, tea houses, and the ancient cities of Nara and Kyoto, to mention a few, are tersely but exquisitely done. The past and future tourist to Japan will find much that is interesting in this book.

Surely the most provocative book in this selection is Ohm's study of Asian views of Christianity. Although intended for the professional missionary so that he can acquaint himself with what is thought and said about Christianity in Asia, in a larger sense, it is a book for all Westerners to read; for Asia, rightly or wrongly, has always equated Western civilization with Christianity. Any criticism of Christianity, therefore, is a criticism of Western civilization.

There is, of course, no single Asian view of Christianity—there are as many views as there are religions and ethical systems in Asia—Hinduism, Islam, Buddhism, Confucianism, Taoism, and Shinto, among others. Ohm leaves no doubt, however, that the prevailing view is a critical one. He says as much in the use of the term "Western Christianity" in the title of his work, the implication being that the Christianity of the West is not the Christianity of Christ. Christianity, according to many Asians, is too materialistic; it is shot through with disagreement (If Europeans cannot themselves find the right denomination, how can they?); it has too many rules (Is it a sin to work on Sunday or eat meat on Friday?); it over-emphasizes professionals and the difference between them and the laity (Christ was not a doctor of divinity; he was only a carpenter); and Christian theology is too wordy and didactic (Words only obscure the truth, according to the Zennist). It is immaterial whether such views are correct or not. What is important is that they exist, and that the West, if it is to understand the East, cannot ignore such criticisms.

That Asia is changing spiritually is evident throughout Ohm's book. Whereas the Asian has historically been reluctant to voice his opinions and criticisms, today he seems eager to offer his views and to question the West. Having shed his colonial yoke and having regained his self-respect, the Asian today is more certain of the worth of his own religions, ethics, and political and social institutions.

It behooves the West, and in particular the Western educator, to inform himself of the change in attitude of two-thirds of the people of the world. The spirit that motivates Asia today is so impatient and restless that the West can no longer afford to indulge in the fantasy of a romantic, unchanging Asia.

# Reviews

*Professional Administrators for America's Schools.* 1960 Yearbook. American Association of School Administrators. Washington, D. C.: The Association, 1960. Pp. 310 + x. $5.00.

Two chapters of this, the final yearbook of the AASA, deserve the attention of all thoughtful educators. They point strongly to some of the most critical strengths and weaknesses of American public education. The first chapter, "A Board Seeks a Superintendent," is a disguised true report of the process whereby an actual (and probably superior) group of lay leaders searched for an executive officer to head their schools. The second chapter reports an extensive study appropriately called "Profile of the Superintendent."

The remainder of this volume suffers from many of the usual limitations of writing done by a commission rather than by a skilled individual. There are internal inconsistencies and vexatious voids. It is pertinent to canvass practicing superintendents concerning their judgment about the values and limitations of their programs of preparation and then to ignore certain major specifics of their responses in developing a proposed program for the preparation of future superintendents. Is the superintendent the only school administrator about whose professional preparation we should be concerned? The wording of parts of this text, as well as the findings of some of the studies reported, reflect a vague concern for "the administrator" in the educational scene. But the superintendent, important as he is, is still numerically of minor significance when one responds to questions such as "Does your college maintain a program for the preparation of school administrators?" There is really a remarkable number of principals abroad in the land!

Nevertheless, we have here some stimulating reading for those concerned with the professionalization of the superintendency, for those who help select candidates for this position, and for those who themselves hope one day to become chief administrator in a public school system. Evident, too, is compromise between differing positions represented by the membership on this commission, as well as the usual bias, championing of causes, and high-level careful study of the real potential of the superintendency as a unique and strategic role in the future of American free public education.

The commission is to be commended for its objectivity and its preparation of a reasonable document which may provide significant help in "making school administration the profession its leaders covet and often claim." In turn, the Association is to be commended for its decision to abandon this type of yearbook. Its weaknesses are too great in contrast to other forms of professional publications sponsored by this and other educational associations.

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Gordon, R. A., & Howell, J. E. *Higher Education for Business.* New York: Columbia Univer. Press, 1959. Pp. xi + 491. $3.50 cloth, $2.50 paper.

Pierson, F. C., & Others, *The Education of American Business Men.* New York: McGraw-Hill, 1959. Pp. xx + 740. $7.50.

These two books make a very interesting and suggestive pair: the education which the American Business School provides, and the implication that the Business leaders of tomorrow require a higher education. As the practitioners grow and mature, which is to some extent related to education, the time may come when Business, as an entity, will have to change its point of view, its practices, policies and procedures; for the Business Man is not only a practitioner, he is also an investor, a customer, a taxpayer, and a member of the larger society. However, it is to be realized that in spite of what the authors suggest, the determinants of the educational requirements of the American Business Man, in the long run, are set by the larger community which is served by Business rather than by Business Schools.

It is a sad truism that the advances in science and technology have outstripped our ability to cope with them and use them effectively for the "good of man." Both of these books are built upon the assumption that the conversion of our natural resources into products and their distribution and the various supporting and auxiliary services are to be managed by people educated in Business Schools. This leads naturally to an assumption that "Business" and "Management" are synonymous. One *can* make this assumption, but it overlooks on the one hand those fields which could be called public and institutional administration such as government, schools, and hospitals, and on the other, that increasingly important field of Engineering Management where so much of what we know as Scientific Management, or as it is coming to be called, Management Science, originated.

It is necessary to keep these boundaries in mind when one studies these reports—for they are dealing with a limited universe. With this limitation in mind, here is presented a pertinent and important problem. Upon its solution will depend the maintenance of our way of life or the claim of "Business" to leadership therein. If Business does not learn to effectively use our resources, then Business will not long be permitted to control and allocate them and we can look to an increase of socialization of our system.

One could, at this point, become philosophical; but the duty of the reviewer is to be descriptive, analytical, and if possible, constructively critical. Since earliest records, Casandras have predicted unpleasant results of perpetuation of the *status quo*, while optimists have spoken about standing upon the threshold of successively new eras. Perhaps, both have been right. The fascinating thing is that in spite of both, we seem to be at much the same place as we were three or four thousand years ago—the forms have changed, but the problems have not.

Perhaps a ferment is good, but wild yeasts can lead to peculiar results in education as in brewing. The brewer knows what his end product will be and what it will be used for—there is not the same clearcut issue in education for business.

Neither of these books attack the very important problem that there must be people to carry decisions into effect while they in turn are making decisions; that everyone cannot be making the big broad policy decision. It is the reviewer's belief that there is a decision process that can be used by anyone at any level.

The recommendation, in the Ford Grant Study, is a series of regional and national meetings to concern themselves with these two reports and to try to get action. It is an excellent idea. But it is important that such meetings expand their horizons and realize that there are other adjectives in front of the words, management, and administration, and to hold several meetings to see if they cannot discover the goals, aims, and processes and procedures, which transcend the particular adjectival field of application. A start has been made at this under a grant by

the Kellogg Foundation to the CPEA (Cooperative Project in Educational Administration). Here, Educational, Public Health, Hospital, Social Service and Nursing Administration held joint meetings in which the reviewer was privileged to participate. One thing which came out of these meetings was the realization that in spite of the different substance, the different ecologies, different histories, and apparently different problems, there was a greater similarity to be found than the different adjectives would suggest.

It is suggested that the preoccupation of the Business School leaders with the notion of top-policy decision making, tends to blind them to the great forward strides in both basic and theoretical thinking and pragmatic application which are being made elsewhere.

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Hancock, R. *Puerto Rico: A Success Story*. Princeton: Van Nostrand, 1960. Pp. vii + 187. $4.75.

Hanson, E. P. *Puerto Rico: Land of Wonders*. New York: Knoff, 1960. Pp. vii + 320 + xiii. $4.50.

The appearance of these two books about Puerto Rico is especially timely. When many parts of the world are suffering under the latent or actual fire of communism, and when the principles of democracy appear to be at stake, it is indeed of great significance that Messrs. Hancock and Hanson, separately and coincidentally, present to the world the unique story of how this tiny and overpopulated island, deprived of natural resources, has raised her people to competence, self respect, and self-government and become, as Hanson puts it, a "proud symbol of American ingenuity, innovation and humanity, and of Puerto Rican vigor and enterprise."

The culture and history of Puerto Rico are presented in a fascinating and readable form. Both authors, Hanson in more detail, give account of the extraordinary events without omitting the everyday life and customs of our people. Even with the expected little exaggerations here and there, the account is a colorful and philosophical interpretation of the Puerto Rican culture expressed in terms of the ideas and thoughts of the people from the humblest jibaro (peasant) to the governor of the island.

Hanson's long association with the Puerto Ricans has enabled him to live and appreciate the island's culture in all its dimensions. Since his previous study of Puerto Rico, *Transformation*, published in 1955, his views have acquired a new precision, definiteness, and solidity, and he reports much about the island's development which can serve as an example to the modern world.

Hancock, an authority on Latin America, also presents a well-balanced picture of the island's problems, including its political status and internal politics.

In contrast to the adverse commentaries on Puerto Rico, these two books constitute a real paean. They sing of the Puerto Rican people's efforts, joys, and triumphs. They will be of interest to humanists, sociologists, and historians as well as educators.

Educators, however, especially those concerned with the education of diverse cultural groups, will have a special interest in these volumes. The United Nations report of 1957 stated that 29.9 per cent of the total Puerto Rican population was in that year enrolled in elementary, secondary, and vocational schools. This figure was the world's highest. It is also significant that one-third of all the island's people are receiving some kind of formal education. Again, the figure is the world's highest. Illiteracy had been reduced to 10 per cent by 1957, and it is hoped that the whole population will be literate by 1970. Says Hanson: "The kind of vital interest that was shown in Puerto Rico by 100,000 adults attending special hearings on education may well be envied by thousands of educators." These are the things they wanted from the school system: single enrollment, more stress on English, history and world geography, higher standards, promotion on the basis of merit only, more homework, cuts in truancy, and

greater retention in schools. They were also concerned with dignity and welfare of the teaching profession and advocated a closer relationship between school and community. Both authors agree: "The faith in themselves is the generating force that moves them to action."

"Puerto Rico has experienced a unique creative explosion. . . . No other people, to our knowledge, have doubled their standard of living in a single decade, or quadrupled it in two such periods. Within this same period of twenty years the average span of life has been increased from 46 to nearly 70 years. . . . The springboard for this fantastic jump was the initiation of an industrial program that has changed the country from one-crop rural slum into an urbanized country with an economy balanced between agriculture and industry, with the odds on industry." So says Hancock, and visitors from all lands come to Puerto Rico to see this metamorphosis, "America's answer to communism."

This pattern of development reflects something of the commitment to spiritual values that characterizes the island's leaders. Governor Munoz Marin, humanist and poet as well as politician extraordinary, has summed up Puerto Rico's vision as entailing economic sufficiency and political freedom conceived as aspects and products of the human spirit realizing itself. It is under leadership with this kind of sense of mission that Puerto Rico is beginning to feel a "deep spiritual urge to link its experience and hope to the wider search for hemispheric unity."

CARMEN S. SANGUINETTI
*Board of Education, New York, N. Y.*

# Book Notes

Havighurst, R. J., & Neugarten, Bernice L. *Society and Education.* Boston: Allyn & Bacon, 1957. Pp. xii + 465. $6.25.

This is an impressive text which integrates our knowledge in social foundations. As such, it will be a valuable resource for teacher education programs at both undergraduate and graduate levels. It is a well-written, well-organized book which could be profitably handed to an intelligent parent or school board member.

The content is focused around the major topics of educational sociology and, for the most part, is solidly based in empirical materials. The theme is the socialization of the child within American culture, and the functions of the various "mind-forming" institutions are described—including the family, peer groups, schools, churches, youth agencies, mass media. Especially thorough is the treatment of social class backgrounds of pupils and teachers and the influence of these factors on teaching-learning processes.

American educational institutions—at elementary, secondary, and college levels—are viewed as major avenues for social mobility. Also, the schools are regarded as playing a large part in the development of "social loyalties," meaning a person's "feelings of belonging to and allegiance to the various groups of which he is a member; his desire to collaborate with others; and the merging of his self-interest with group-interest" (p. 59).

The authors are to be congratulated for their emphasis on the development of children's loyalties as a central aspect of the socialization process. But they have not said the last words on the subject. Recent research suggests that the most crucial question, not considered by these authors, is whether the child's orientation toward the authority figures of his family, school, church, and nation is idealized-submissive rather than objective-evaluative. This, it seems, is the difference between "blind" and "open-ended" loyalties.

ALFRED E. KUENZLI
*Southern Illinois University*

Remmers, H. H., Gage, N. L., & Rummel, J. F. *A Practical Introduction to Measurement and Evaluation.* New York: Harper & Bros., 1960. Pp. xiii + 370. $4.75.

This volume could be offered in support of the proposition that it is harder to write a good little book than a good big one. When one restricts oneself to half the normal compass, in the attempt to produce something for teachers that will appear neither too costly nor too forbidding, one faces a series of difficult problems of selection and compromise. Probably no one, the present reviewer included, will be completely satisfied with the decisions that are made. For example, devoting eight pages to computation procedures for the correlation coefficient while making no mention of informal techniques of item analysis by which a teacher can improve his own tests seems a serious imbalance. Furthermore, in order to

save space there is pressure to present general principles in broad outline, while cutting down on the illustrations and explanations that give them substance and meaning. Some of this appears to have occurred in the present volume.

The book is a sound one, none the less, but this reviewer prefers the fuller *Educational Measurement and Evaluation* from which it has been abridged.

ROBERT L. THORNDIKE
*Teachers College, Columbia University*

Shapiro, Karl. *In Defense of Ignorance.* New York: Random House, 1960. Pp. xii-339. $4.00.

At first, Karl Shapiro's *In Defense of Ignorance,* despite its iconoclastic title, seems no more than a collection of essays on literature by a distinguished poet, teacher, and editor—a collection unified by his hope "to restore the respect of the ordinary reader for his own judgment." Toward that end, Mr. Shapiro's attack on modern criticism as a conspiracy to maintain anti-democratic, "ideological" poets like Yeats, Pound, and Eliot as the only significant "moderns" may help. Certainly, even if his attack is overwrought, many of his specific judgments are sound enough to stimulate revaluations. Yet *In Defense of Ignorance* reveals another purpose. Poetry, Mr. Shapiro admits, is simply a point of departure "to perceive the intellectual dry rot of our age." That dry rot is intellect itself when it imposes artificial categories and abstractions upon the felt unity and spontaneity of experience. "Everything we are taught is false," he says, because it is second hand, impersonal. The "ignorance" he defends is what one learns first hand or intuitively. Indeed, it becomes apparent, like the writers he attacks, his essential concern is not literature, but religious faith. For him, however, "religion" should be uncorrupted by any "ideology," any doctrine. The mystical vision of Blake, or better, the "cosmic consciousness" of Whitman points the way. *In Defense of Ignorance* is a very American book in its individualism, its suspicion of ideas. It is also an honest, but ironic book: the non-intellectual poet, turned iconoclastic critic, often advances opinions as dogmatic as those he detests.

E. P. BOLLIER
*Newcomb College, Tulane University*

Uris, Dorothy. *Everybody's Book of Better Speaking.* New York: McKay, 1960. Pp. xi + 267. $4.95.

Brooklyn can now acclaim Dorothy Uris, a native daughter, who defies the stereotype and demonstrates that a Brooklynite *can* take pride in good speech, and what is even more, can teach it to others.

A major purpose of her attractive and interesting book is to "uncover some of the snags that tangle person-to-person lines of communication, and probe beneath the surface of speaking manners and mores." She stresses the need for developing skill in conversation rather than the winning-friends-and-influencing-people approach, and she suggests specific techniques and drills for voice and speech improvement.

Mrs. Uris is obviously a dynamic and resourceful practicing speech teacher, but although there is much in this book to commend, she never really develops sufficiently any one of the areas that could prove helpful to the serious do-it-yourself student of speech. This reader was overwhelmed by the range of subject matter and the plethora of philosophical tid-bits packed into 267 pages. The book is written in a breezy and colloquial style and the title, general format, and section headings are clever and catchy. But it is neither fish nor fowl. It cannot rate as a worthwhile textbook in the area of speech improvement, nor is it quite as clear and logically organized as a home manual should be.

If some of Mrs. Uris's ideas are exciting, imaginative, and at times, even brilliant, they are likely in their present setting to go unnoticed, unappreciated for want of a clearer frame of reference.

HAROLD M. SCHOLL
*Montclair State College*

Moorehead, A. *No Room in the Ark.* New York: Harper & Bros., 1959. Pp. 227. $5.00.

Those who are interested in African wildlife will enjoy this book. It teems with the life of the veld, from the lowly mongooses who vanish into their holes in the ant-hills "posting themselves like letters in a pillar box" to the aristocratic giraffes who "have a slightly affronted air when they are disturbed" and "somehow contrive to make you feel as though you have just said something in particularly bad taste."

Over the years camera crews have worn a path between the Cape and Cairo, and the once Dark Continent has capitulated, in a way which the writer of travel books must find somewhat disheartening, to modern color film. Films like "The African Lion" and "King Solomon's Mines" have robbed books like Mr. Moorehead's of much of their novelty. The fact that his book has enjoyed several re-printings therefore says much for Mr. Moorehead's skill as a writer.

One can only hope that his constantly reiterated warning will not go unheeded: unless steps are taken to safeguard Africa's fast dwindling herds of game, the traveller of the future will scan the veld in vain.

JEAN JORDAAN
*Teachers College, Columbia University*

Leslie, L. A., Zoubek, C. E., & Deese, J. *Gregg Notehand.* New York: McGraw-Hill, 1960. Pp. 320. $4.48.

The collaboration of an educational psychologist and two shorthand specialists, *Gregg Notehand* is an unusual combination of instruction in the art of note-taking and basic shorthand. Its objective is simply the recognition that many people have to take notes and few people know how to. Designed to teach shorthand for personal use rather than for vocational competence, the text fulfills its purpose even though the elementary principles which it treats are somewhat elaborately dwelled upon.

A teacher's manual of 40 pages accompanies the text.

JO HARRISON
*Teachers College, Columbia University*

Rowe, K. T. *A Theater in Your Head.* New York: Funk & Wagnalls, 1960. Pp. 438. $6.95.

The playwright's script is the raw material for one's total experience of a play. Those additional dimensions which the director, actors, designers, and an imaginative audience or reader bring to theatrical literature are the concern of Professor Rowe in *A Theater in Your Head.* His approach is chatty, and although we may sometimes forget where we are being led, the journey is always pleasant. Especially valuable are the excerpts from the notebooks of John Gielgud and Elia Kazan and the section on "Evaluating Plays," which includes an unpublished play with Rowe's informative running analysis.

PETER HILTY
*Park College*

Fait, H. F. *Adapted Physical Education.* Philadelphia and London: Saunders, 1960. Pp. x + 332. $5.50.

This volume breaks from the traditional corrective exercise approach and presents a truly adaptive program of games and sports for the handicapped child. Although primarily geared to an audience of neophyte physical educators in the schools, the book is a useful resource to those working with atypical children in hospitals, camps, and special institutions.

Several features appeal particularly to physical educators, whether new or seasoned teachers. The chapter concerned with working with the child of low physical fitness deals with the debilitated student who is rarely considered in programing. The discussions and suggestions for coping with students displaying poor attitude, fear, or intense dislike of physical activity are out-

standing. Although programs for the aged are discussed, it is unfortunate that more effort was not devoted to this area of growing concern.

The seasoned practitioner of physical education and the special teacher may find a troublesome tendency to oversimplify the myriad problems surrounding activity for the handicapped. The book should, however, generate more concern and convey more knowledge to teachers, helping them to encourage participation by the handicapped in regular class experiences. If so, it will serve the profession well.

HALLY B. W. POINDEXTER
*Teachers College, Columbia University*

Read, Margaret. *Children of Their Fathers: Growing Up Among The Ngoni of Nyasaland.* New Haven: Yale Univer. Press, 1960. Pp. 176. $4.75.

An anthropologist's contribution to the growing culture-personality literature. Hopefully intended to throw light on our own problems of personality development, its contribution here is very slight. This is due to the vast differences between a simple culture standardized by ancient traditions and our own with its rapid changes and diverse, often conflicting, standards.

FRANK H. HANKINS
*Smith College*

Klopf, G. *College Student Government.* New York: Harper & Bros., 1960. Pp. 108. $3.50.

Dr. Klopf's book will prove disappointing to a college staff member who is experienced in working with student groups and is searching for a new and constructive methodology. Attempting to reach a wide readership, the author has sacrificed synthesis of materials and depth of exploration for breadth of coverage. The result is a superficial introduction that is unlikely to make a notable contribution to the literature of student personnel work.

RUTH BARRY and BEVERLY WOLF
*University of South Dakota*

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